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The American Speech and Hearing Association

TWENTY-EIGHTH ANNUAL CONVENTION

November 20-22, 1952, Detroit, Michigan

FORMAL CALL FOR PAPERS

THE PROGRAM COMMITTEE will receive until September 1 abstracts of papers and addresses proposed for presentation at the convention. Topics cannot be considered unless accompanied by an abstract of the paper.

Papers are solicited in relation to the following general subjects:

1. Theoretical or experimental papers on speech disorders, hearing disorders, experimental phonetics, speech science, or psychoacoustics.

2. Practical discussions of techniques for the rehabilitation of persons afflicted by disorders of speech and hearing.

3. National, state or city programs for the rehabilitation of persons with speech or hearing disorders.

4. Experimental or practical papers concerning speech and hearing factors in military communication.

It is suggested that papers be composed for approximately 15-minute presentation. Except under extraordinary circumstances no paper can be accepted which requires more than 20 minutes for presentation.

All abstracts must be received by September 1, 1952. In addition to summarizing the paper each abstract must indicate (a) the full title of the paper and the name of the contributor as requested for listing in the printed program, (b) the time requirements, (c) details on the type of visual or audio aids needed, and (d) special requirements. The professional affiliation of the author should be stated.

Receipt of an abstract will be taken as evidence that the contributor is aware of the following rules governing the conduct of section meetings:

1. All meetings will begin when scheduled.

2. Chairmen will, without exception, hold the speaker to the time limits set forth in the printed program.

3. Speakers should prepare papers in such a way that briefer summaries may be given in case an emergency necessitates shortening of presentation time.

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Group Testing Of School Children By Pure Tone Audiometry

S. F. Nielsen

SINCE 1941, systematic tests of the hearing of school children in Esbjerg, Denmark have been administered by pure tone audiometry. The work has been carried on by means of an audiometer especially constructed for group testing.

Considering that the whisper test usually identifies only about eight per cent of the hearing impairments among school children, whereas the pure tone audiometer is known to be far more selective, it was decided at the outset to use pure tone audiometry in the tests.

A group test on hearing ability in itself was, in 1940, nothing new, but only the recorded human voice had been used. This group testing technique, however, was merely the whispered voice test with all its defects, and compared with pure tone testing was unsatisfactory. On the other hand, it had the valuable feature that the children were busy during the test writing down the numbers they heard.

It was assumed at the outset that it would be of great importance for the children to participate actively in the test. Pressing a button held in the hand is not considered a good method, since the child may fall to 'dreaming' while holding the button. The task, therefore, was to find a method of testing using pure tone audiometry in which the children were occupied during the whole test by writing a series of symbols.

It is easier for the ear to detect an interrupted weak tone than a continuously decreasing tone. The latter is more fatiguing and the possibility of identifying the threshold exactly is less. The presentation of interrupted tones is a further means of keeping the attention of the child. A pattern of tones, furthermore, provides a means for the child to identify what he has heard, and a means of checking his response.

It was considered undesirable, however, merely to ask the children to make a dot each time they heard a tone, it being probable that part of the children would simply fill in the paper with dots from one end to the other, thus providing no test of what they had heard, and, further, providing no means of checking their forms after the test. A system of short and long tones, however, could be varied so that a certain number of signals, say four, could be delivered at each intensity and the pattern could be varied almost indefinitely. In this way, the system could not be fathomed by the child and could be easily checked afterwards.

S. F. Nielsen (M.D., Copenhagen, 1923) is Head Surgeon, Otological Department, St. Joseph's Hospital, and Director of the Hearing Center for the Danish Society of the Hard of Hearing and for the Muncipal Schools, Esbjerg, Denmark.

It was thus decided to develop a test in which the tone interrupter was used to deliver certain patterns of tones, and to use printed forms on which the pupils reported what they had heard by writing symbols corresponding to the tone pattern.

The audiometer,[1] especially constructed for these tests, is scientifically approved and meets the standards set by an American committee on audiometer standards. It is a multiple headset instrument which produces 10 pure tones, ranging from 128 cps to 11,584 cps, the intensity for which may be varied from 0 to 50 db in 5 db steps. Since it proved too tiring to use all the test tones, however, only the five tones from 256 to 4,096 cps are tested, using a group of four signals at each of the following intensities: 45, 35, 25, 15, 5 and 0 db. A total of 100 signals are delivered to each ear. Nineteen children are tested at a time. It would be possible, however, to construct an audiometer which could test 30 or 40 pupils at a time. It takes about 15 to 20 minutes to test each group of 19 and check the forms. Using one forenoon each week during six months, it is possible to test 2,500 pupils each school year. If 40 pupils were tested at a time it would be possible to test about 40,000 each year; and, assuming a test on each pupil every other year, a school system of about 80,000 pupils could be handled by the Esbjerg method.

Test Procedure

When the children have been seated and have written their name, address, birthday, year of birth, and number of class, the tester gives the following instructions:

> In a short time you are supposed to write on the paper placed before you on the table. Each time you hear a brief tone like a little 'toot,' mark a dot in the middle of one of the squares, and each time you hear a long tone like a 't-o-o-t,' make a dash from one edge of the square to the other. You will have to start on the first line marked '1' on the form and fill in one square after the other from left to right with the tones you hear. When you get toward the end of the line, you will discover that the tones are growing weaker and if the tone grows so weak that you do not hear it any longer, do not write, although you have not filled in all squares of the line. Just mark the tones you hear and do not guess.

The tester demonstrates the dot and dash on the blackboard as he gives the instructions. The binaural earphones are then placed on the pupils; the tester also wears a pair of phones for checking purposes. The tester then tells the children:

> You must not start yet, but just listen and then tell me what you would write down when you heard this tone.

A series of dots and dashes are presented until it is clear that each child understands what he is supposed to do. When the test has begun it is not necessary to give further instruction than the information that a new line is to be started.

It has been possible to test children as young as six years by this method; thus, the entire school population can be surveyed by the same method.

Test Results

A special tabulation was made in 1943 of the test results of 462 children equally distributed among all classes from the second elementary through

[1]The audiometer originally used was a Loreni (Copenhagen) built for 19 pupils. In the last six months an audiometer built for 36 pupils by Peters and Sons, Ltd., Sheffield, has been used.

the second middle school class.[2] It was expected that more hearing losses would be found in the lower grades than in the upper, and this is substantiated by the results, shown in Figure 1. It was also found that the losses of 5-10 db far exceeded those of greater magnitude. These results indicated the importance of testing children in the lower classes, in order that preventive hygiene could be begun as early as possible.

Further proof of the importance of early testing and treatment is provided by a comparison made in 1945 between groups of pupils who had been regularly tested and received treatment and similar pupils who had not previously been tested. Opportunity for such a comparison was provided when previously unincorporated schools were brought into the Esbjerg system. All pupils in the fifth elementary class, age about 11 years, in each of the two types of schools were tested.

Results are shown in Figure 2. It can be seen that hearing losses of 25-40 db were found in the previously untested schools, while such losses were non-existent in the schools where testing was a regular practice. Five to seven times more pupils in the untested schools than the tested schools had losses so severe as to require retesting.

These statistics also indicate that the present system of regular testing and treatment has resulted in a situation in which severe hearing losses are no longer found.

Summary

A method for group testing of school children by pure tone audiom-

[2]The children in these classes normally range in age from 8 to 13 years.

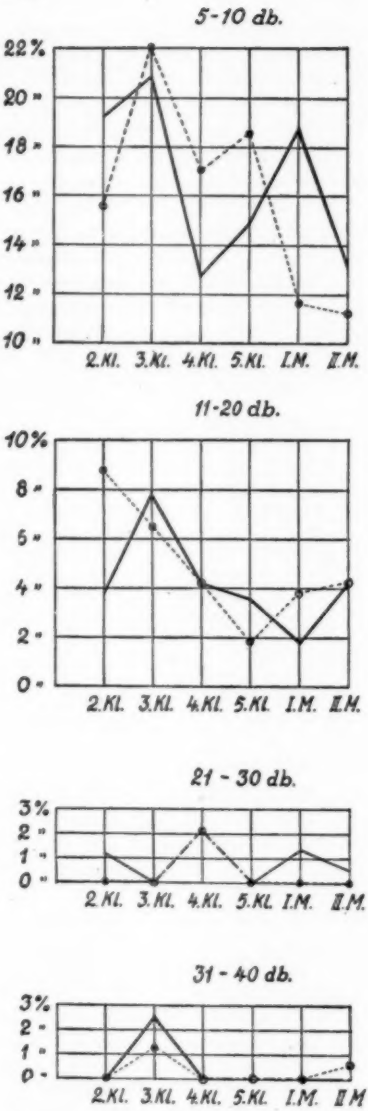

FIGURE 1. Percentage of total pupil enrollment in 4 elementary and 2 middle school classes showing hearing losses of 5-10 db, 11-20 db, 21-30 db, and 31-40 db. Right ear, unbroken line; left ear, dotted line. N=462.

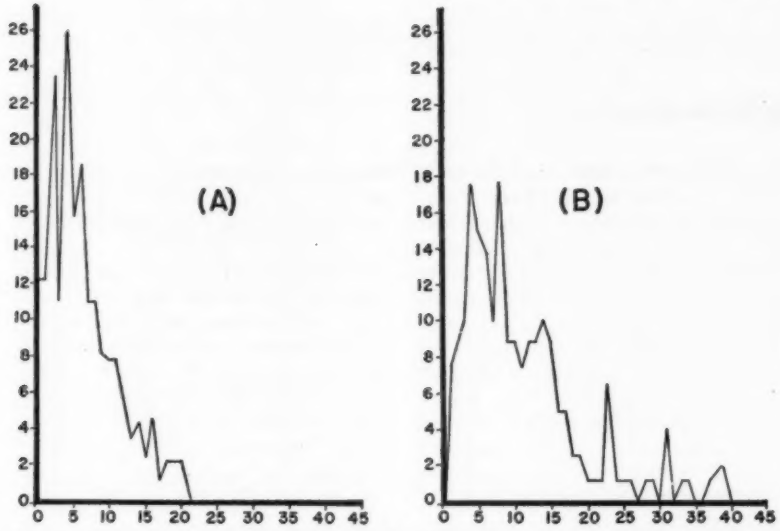

FIGURE 2. Percentage of pupils in the fifth elementary classes showing hearing losses from 1 to 45 db. A, schools in which testing and treatment had been administered previously; B, schools in which there had previously been no testing.

etry has been described. The method is suitable for testing school pupils of all ages, and a population of several thousand can be tested regularly every other year.

Records show that hearing losses are most common among the younger pupils, and that if testing is performed regularly, with follow-up treatment, number and severity of hearing losses in the upper grades is markedly decreased.

An Efficient Group Screening Test

Philip W. Johnston

AN ARRANGEMENT may be easily made whereby a complete pure tone screening test can be given to 10 children at a time. The accuracy obtainable with the group test closely approaches the accuracy of individual sweep check screening tests.

Experimental work and field trials carried out over a period of the past 21 months have combined to set up definite recommendations with respect to equipment and procedure for this group screening test. The Massachusetts Department of Public Health has acquainted audiometer manufacturers with test details, with the result that leading manufacturers now modify audiometers sold for school use so that they may be easily adapted for the group test.

Procedure

Ten children are seated in a semicircle about a table. (Older children may simply stand in a semicircle around a table.) All children are seated so as to face the tester. The children are told, in effect, that their hearing is to be tested and that each child is to hold up his hand whenever he hears a signal. Each child is to lower his hand when no signal is heard. Further, it is impressed upon the 10 children that the equipment is arranged so that the signal may, at times, be deliberately excluded from certain receivers. The children are warned, therefore, to pay no attention to what other children in the group are doing but to raise or lower their hands in accordance with what they hear or do not hear in their own particular receiver. After this instruction, the tester has the children place against their right ears the earphones which have been set on the table in front of each seat.

When the audiometer employed contains a bone circuit, the tray of 10 receivers is connected directly to the bone jack or, in some instances, to the multiple jack. If the bone circuit of the audiometer has been modified in accordance with the method to be described subsequently, the audiometer will be capable of producing signals of 15 db sensation level at any frequency from 125 cps through 6000 cps in each of the 10 magnetic receivers. This will be accomplished, moreover, simply by throwing the selector switch from air to bone position. The attenuator is left fixed at 15 db by bone or, what amounts to the same thing, at 55 db by air. In accordance with the spirit of the recent recommendation of the Council on Physical Medicine and Rehabilitation of the American Medical Association (*1*), no group testing is done at frequencies higher than 6000 cps. Similarly, no *individual* pure tone testing will henceforth be done on Massachusetts school children at frequencies above 6000 cps.

Philip W. Johnston (Ph.D., Harvard, 1942) is Head of the Child Growth and Development Section, Massachusetts Department of Public Health. James F. Gentile gave valuable assistance in the field trials reported.

In effect, the tester sets the audiometer controls exactly as he would set them were he to give an individual sweep check screening test, except that the selector switch is thrown from air to bone and the attenuator is left fixed at 15 db by bone instead of 15 db by air. In sweeping through the various frequencies for testing first the right ear, then the left, the tester periodically interrupts the signal with the tone interrupter switch, thus causing the hands of all 10 children to drop. Once or twice during the testing of each group of children, however, the tester depresses a push button which is wired into the lead to the tray of 10 receivers. This push button is placed in front of the audiometer and is concealed from the view of the children. The 10 receivers are connected in such a way that when the push button is depressed, the signal is removed from only *two* of the 10 receivers. Since the tester knows the exact location of these two receivers, he is able to reassure himself periodically that the children are giving honest responses. The placement of the two receivers which can be cut out of the circuit can be changed from group to group.

As the group sweep check continues, the tester makes note of those children who have an apparent hearing loss at one or more frequencies. Such children receive an individual pure tone test, either on the spot or at a later time.

This group test can be given with approximately the same ease as an individual sweep check test. Insofar as manipulation of audiometer controls is concerned, the only real difference is the fact that the tester depresses the push button once or twice during the testing sequence. No difficulty is experienced in testing first-grade children with this method. In some schools, the ambient noise level is so high that the tester is obliged to increase the sensation level if a satisfactory failure rate is to be obtained. In this case, the tester merely leaves the attenuator fixed at 20 db by bone (60 db by air) for all frequencies.

It is readily seen that the test might be designed so that more than two receivers are taken out of the normal circuit, but field work has shown that two receivers are sufficient to keep good control over the children. Similarly, it may ultimately be possible to apply the same basic arrangement to larger groups of children. This possibility awaits further investigation.

The group test just described has several advantages, particularly for smaller schools where it becomes inefficient to set up 40 receivers for screening relatively few children. The advantages of the new test are as follows:

1. No paper or pencils are used by the children.

2. The tester employs basically the same simple procedure used in individual sweep check screening tests.

3. The method is much less fatiguing and faster than individual testing.

4. Total equipment consists of an audiometer and a single tray of 10 receivers.

5. Accuracy of the test is of the same order as that provided by individual sweep check test. The frequencies and sensation levels used are the same as those commonly used in individual testing. No frequencies are omitted.

6. Magnetic receivers and relative simplicity of conversion requirements result in minimum expense.

7. The conversion of an audiometer for the test described above does not affect in any way the usefulness of the audiometer in individual testing. Neither does it impair the usefulness of the audiometer in giving the group Massachusetts Hearing Test (2).

8. Testing may be done in nurses', teachers', or other available rooms instead of in a regular classroom.

9. First-grade children may be group tested by this method.

Limitation of Test. Most schools could not afford to do group pure tone testing if dynamic receivers were required for group testing. Fortunately, magnetic receivers of the type indicated do about as well as dynamic receivers *provided* the sound pressures involved are not greater than 30 db re threshold. Testers should never attempt to plot a conventional audiogram with magnetic group equipment, therefore, but should restrict the equipment to screening activities.

After an audiometer is converted to this arrangement, bone conduction tests can no longer be given with the audiometer. Since bone conduction tests are rarely given by school personnel, however, this restriction is of little practical importance.

Experimental Results. Some indication of the performance to be expected from this group test is given by the results obtained in screening completely an elementary school population of 373 pupils. Of the 373 children screened, 37 children failed the group test. Of the 37 failing the group test, 27 children were subsequently shown by individual threshold tests to have referrable hearing losses. The number of children unnecessarily failing the group test because of borderline impairments or other reasons is considered quite satisfactory, particularly since experience indicates that several of these children would have similarly failed if an individual sweep check screening had been done initially instead of the group screening.

The net failure rate for the sample group of 373 children was 7.2 per cent, which is within one-half of one per cent of the net failure rate obtained with Massachusetts school children when individual sweep check testing is employed. The observed rate difference between the two types of tests can be assigned to sampling variation.

This work further indicates that a minimum of 300 elementary school children can be group tested in one school day by a single tester without subjecting the tester to undue time pressures or other unrealistic testing conditions.

Modification of Audiometer and Receivers. The modification of an audiometer which contains a bone circuit is straightforward and simple. Resistors to be inserted in the bone calibration deck are selected so as to produce sensation levels of 15 db at all frequencies when the attenuator is fixed at 15 db by bone (55 db by air). No difficulty has been experienced in selecting reasonable resistor values for all frequencies from 125 through 6000 cps. The sensation levels are measured at the 10 magnetic receivers.

Considerable work was done in connection with receiver arrangements. Field trials with dual receivers in a headband proved that this arrangement was unwieldy. Single, hand-held receivers are definitely recommended as less expensive and more convenient than receivers held in a headband.

The receivers most frequently used are magnetic Western Electric No.

716-A's, recovered from replaced speech audiometric equipment. Each receiver is modified only to the extent that a large Insuline No. 195 rubber cushion is slipped directly over the plastic case. The headbands normally attached to these receivers are removed.

The tray of 10 receivers is connected to the bone jack of the audiometer or, alternately, to the multiple jack. In the latter case, the bone jack is shorted to the multiple jack. A convenient method for determining correct sensation levels is through the use of balance tests whereby three or four observers match the signal on the magnetic group receivers to a standard 15 db signal obtained from another audiometric source. It is very important that subjects use the normal equipment of the standard audiometric source in these measurements. If the standard audiometer normally employs a headband, a live receiver and a dummy receiver, it is not satisfactory for the subjects merely to hold the live receiver to their ears. Short-cuts such as these invariably result in setting too low sensation levels for the group receivers.

Alternately, Table 1 gives a set of voltages which will produce correct sensation levels when Western Electric No. 716-A receivers, inserted in Insuline No. 195 rubber cushions, are used as group receivers. These voltages are measured with a Ballantine 300 VTVM in conjunction with a Ballantine 220 decade amplifier. Manufacturing variations in response from receiver to receiver are so small as to be negligible *provided* that all sensation levels are no higher than 20 db.

If the audiometer is a screening or school model type and contains only an air circuit, it becomes necessary to remove the frequency switch. This switch is replaced with one carrying an added wafer. Resistors are associated with the added wafer in a manner similar to that described for the case of audiometers with bone conduction circuits. In the case of audiometers having only air circuits, the group receivers are, of course, plugged into the air jack. Also, an 'individual-group' switch which serves the same purpose as the air-bone selector switch is added to the front panel.

The connections for the tray of Western Electric No. 716-A magnetic

TABLE 1. Calibration data for Western Electric No. 716-A receivers.

Frequency (cps)	*Volts X10^{-3}*	*Sound Pressure Re Threshold (db)*	*Volts X10^{-3}*	*Sound Pressure Re Threshold (db)*
125	13.00	15	22.50	20
250	2.50	15	4.50	20
500	0.62	15	1.00	20
1000	0.25	15	0.45	20
1500	0.15	15	0.27	20
2000	0.35	15	0.62	20
3000	0.60	15	1.10	20
4000	3.20	15	5.40	20
6000	17.00	15	30.00	20

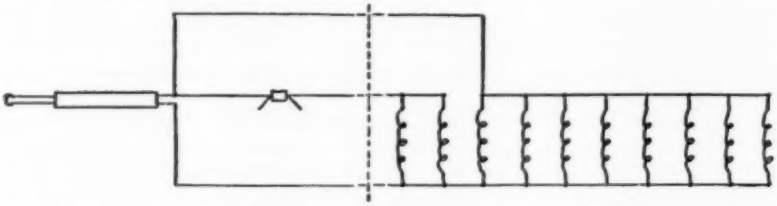

FIGURE 1. Connections for Western Electric No. 716-A magnetic receivers to pure tone audiometer.

receivers are shown in Figure 1. Since the push button is normally closed, this tray can continue to be used for other types of testing where the push button circuit is not needed. The tray connections shown are satisfactory for audiometers whose output impedance is approximately 20 ohms. For audiometers with output impedances of 300 ohms, it is well to connect the group receivers in series parallel or to add a suitable resistor in series with the tray. The change in impedance which occurs when the push button is depressed normally requires no compensation.

Summary

A method is described whereby a complete pure tone screening test can be given to 10 children at a time. The test does not employ paper or pencils. The test utilizes the bone circuit of air-bone audiometers for group testing purposes. A simple conversion also enables the test to be given with audiometers having only air circuits. Conversion costs are minimized by adapting the audiometer circuit to available magnetic receivers. The test is the outcome of 21 months of experimental work and field trials.

References

1. Council on Physical Medicine and Rehabilitation, American Medical Association. Audiometry at higher frequencies. *J. Amer. med. Ass.*, 146, 1951, 817.
2. JOHNSTON, P. W. The Massachusetts hearing test. *J. acoust. Soc. Amer.*, 20, 1948, 697-703.

The Test Situation In PGSR Audiometry

William G. Hardy

Miriam D. Pauls

THE USE OF psychogalvanic skin-resistance (PGSR) audiometry in testing the hearing of infants and very young children has aroused considerable interest in recent years. A good deal of inquiry is currently directed to problems of the instrumentation and interpretation of the data presented. Even more important, perhaps, are the methods of handling the child under test, for there is a causal relationship between the test situation and the interpretation of the data. Because of what a psychogalvanometer is and does, clinicians soon learn that the test situation must be controlled with great care. The idea of skin-resistance audiometry is quite simple; its satisfactory execution in clinical routine is extremely difficult.

A two-man team is a basic requirement—one person to handle the child, the other to operate the instruments, with both working together in the closest possible rapport. Most of the difficulties inherent in PGSR audiometry are implicit in what is measured with the Féré effect. A wide variety of stimuli, both internal and external, invoke changes in sweat gland activity. For the purpose of testing hearing, a child is given a mild faradic shock a few seconds following a test-tone. When the experience is repeated 5 to 10 times, increased sweating occurs before the shock is felt. This physiologic fact is the basis of PGSR audiometry. Once this conditioning is established, the shock is used only when necessary as reinforcement, and the test-tones are presented as in standard audiometry, from which the method differs only in the manner of observing the patient's responses. Instead of raising a finger or moving a toy, the child sweats if the tone is heard, and the presence or absence of this response is recorded in various waves by an ink-writer on a roll of paper. Precisely what causes the sweating is unknown; it is a function of the sympathetic nervous system. The phenomenon has been known, however, since Féré's work in 1888, and has been widely used in many different kinds of psychobiologic measurements.

William G. Hardy (Ph.D., Cornell, 1943) is Associate Professor of Otolaryngology and Environmental Medicine and Director of the Hearing and Speech Center, and Miriam D. Pauls (Ph.D., Northwestern, 1949) is Assistant Professor of Otolaryngology and Environmental Medicine, The Johns Hopkins University and Hospital.

Problems of the Test Situation

Anyone watching the wave forms recorded by the ink-writer soon realizes that there is a fairly typical pattern for a child who is comfortable, reasonably happy and at rest, and a

variety of other patterns (or variations so great that the term 'pattern' scarcely applies) for children in different states of excitation or with deviant physiologic conditions that are reflected in the activity of the sympathetic nervous system. A child who is unduly disturbed will show uneven surges in sweating; basic skin-resistance changes under the electrodes may change markedly in either direction during the test. A full blown, planned temper tantrum, on the contrary, produces little difference in the action of the sweat glands. With the athetoid child there are marked changes, presumably associated with the involuntary muscular contractions.

The primary clinical requirement in PGSR audiometry with young children is the need to learn how to read the wave forms for audiometric significance, to eliminate the extraneous responses and concentrate on data that are relatable to the function of the hearing mechanism. Thus, there is great need to control the environment of the test situation, to reduce the array of stimuli, and to help stabilize the child's behavior to whatever extent is warranted so that responses significant of hearing are interpretable. For all these reasons, and some others too obvious for discussion, it is well to be acquainted with the child before undertaking a PGSR test. The following discussion reflects the highlights of what the writers have learned through a period of several years—with considerable profit from studying clinical failures—in more than 1,000 tests of children ranging from early infancy to kindergarten age.

Preliminary Activity

Good hearing testing of infants and young children is at best a time-consuming procedure. Exclusive of the otologic examination, the procedure takes between an hour and an hour and a half. In the sequence of events, PGSR audiometry is the last step in the general work-up.

A suitably equipped playroom is a primary requirement. Here, while the child is making himself at home, parents are led to relax and to impart some useful information about their child's habits and attitudes. The establishment of reasonable rapport with both parent and child is important. In this setting, a full case history is obtained and some evaluation is made of the child's development. A variety of the Gesell norms may be employed; the Seguin form-board is useful for many two- and three-year-olds; play-activity is observed; and special attention is paid to details of social maturity. This is a good occasion to observe parent-child relations and to begin to make some estimate of the child's hearing and the extent of his communicative development.

The next step includes a gross evaluation of hearing responses in a sound-proofed room with the use of high fidelity amplification. At least one parent, the child, and one of the test team are in the room together and various signals are employed—voice, masking noise, whistles, animal sounds, music, and pure tones—with output from a loudspeaker. If the child has some speech and language, an approximation of speech-hearing thresholds may be made with the use of toys or appropriate pictures. The clinicians watch for the usual reflexive responses—eye movements and head turning toward the loudspeaker, smiling, and the like. This procedure with one- and two-year-olds gives general information about the intensity and quality of sounds that evoke responses. Under ordinary circumstances, this procedure

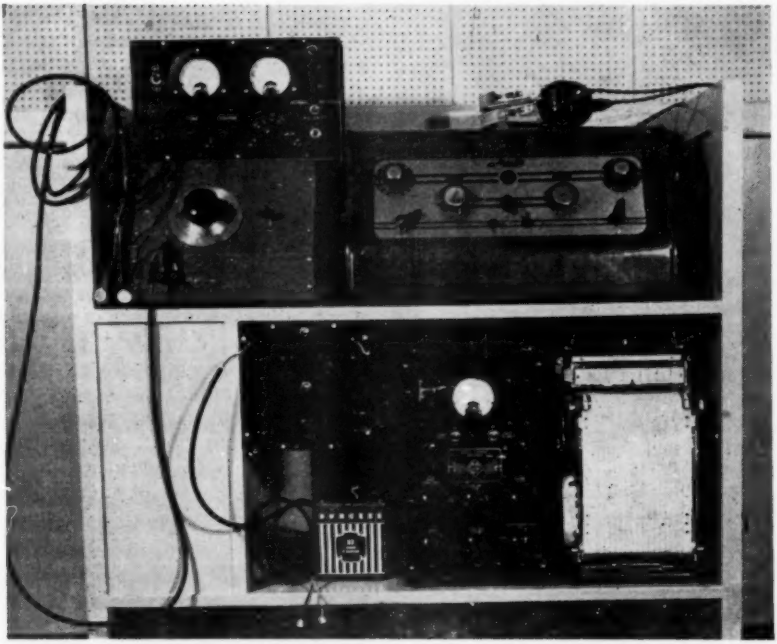

FIGURE 1. Equipment for PGSR audiometry.

should help to specify a profound, a moderate, or a very mild hearing loss.

The PGSR Test Situation

The PGSR equipment is set up in a room designed to be attractive for the child. The equipment (Figure 1) is housed in an inconspicuous cabinet so that it is masked from the child, who sees nothing of it but the headphones and wires from the electrodes. In most instances, it is wise to have at least one parent in the room, but out of the scene, in the background, where by his presence alone he lends reassurance to the child. Occasionally, a parent is asked to hold a headphone over the child's ear, but his real contribution is to strengthen the child's sense of security. This is explained to the parent, and he is asked to avoid direct contact, even eye contact, with the child. Oftentimes, the phrase, 'this works something like a lie detector,' sets a suitable tone. Oddly enough, many people think they know what a lie detector is, and, by analogy, get some idea of what we are trying to do with PGSR audiometry. When the child will tolerate them, binaural headphones are used; otherwise, a single headphone is held over the ear under test. Without restraint of the child, the phone should be held firmly in position. Many youngsters set up evasive tactics; these should be met gently but firmly, with no giving of ground. Most children who do object to the headphone against the ear learn

FIGURE 2. An 11-month-old infant under test.

fairly rapidly to retire from a losing struggle, provided they are allowed to 'save face' with a lollipop or an attractive toy.

Disposition of the Child. The position of the child varies with age and behavior. A very young infant or a very insecure child is usually held on the lap of the clinician or a parent (see Figure 2). Children in the age range from 18 to 36 months are placed in a highchair that has a large, detachable tray (see Figure 3). In this situation, the child is high enough so that he may be readily observed, the highchair is familiar ground, the tray provides working space for engaging the child's attention and masks visually the procedure of attaching the electrodes—sometimes a critical moment in maintaining rapport with the child. In general, the use of a large highchair simplifies many problems of physical management.

Children over three years are invited to sit in a small rocking chair, in a small armchair, or in a small straight chair at a table. Many children of this age range (3 to 5 years) have adopted the attributes of independence, but still value the relative security of armchairs. They cannot be expected to hold themselves upright on any stool or hassock that happens to be available, nor do they like to be engulfed in an adult chair. Most children of this age range are tested with binaural phones.

Placement of the Electrodes. There is some freedom of choice, as well, in placing the electrodes. Two important points must be considered. First, the place of attachment should be rich in sweat glands and therefore offer a relatively low skin resistance. Second, the electrodes must be firmly attached; if there is much movement of the electrodes they will 'spill' static, producing random surges of the record-

FIGURE 3. A 29-month-old infant under test.

ing needle that are most discouraging to watch. Three positions of the electrodes best meet these two conditions: (1) the palmar and dorsal surfaces of the hand, (2) the sole and dorsal surface of the foot, and (3) the soft pads near the first joint of the second and third fingers of one hand.

With children under 18 months of age, the pickup electrodes are usually placed on one foot. With the tiny infants (4 to 8 months), whose muscular contractions make a foot almost prehensile, it is well to separate the wires and place one electrode on the under surface of each heel. The shock electrodes are always placed on the calf of one leg, where there is plenty of soft tissue. Placement occasionally offers a problem with cerebral palsied children, and must be worked out according to the particular child's condition; a wholly or partially denervated limb will not serve for pickup.

With children older than 18 months, pickup from the finger tips is recommended when feasible, for this site is rich in sweat glands and ordinarily quite sensitive. For obvious reasons, the preferred hand should be unencumbered. Fortunately, many children have been sufficiently conditioned to Band-Aids, so that the tape over small electrodes on the fingers is a familiar state of affairs. Sometimes, however, small fingers simply wiggle too much, and the pickup must be shifted to a foot.

Three sizes of electrodes are used (see Figure 4). Pure, polished zinc is a preferred metal. A ¾-inch size is used for pickup from the foot and for the shock. A ⅜-inch size is used for the pads at the finger tips; otherwise, for this position, a curved electrode ⅜-

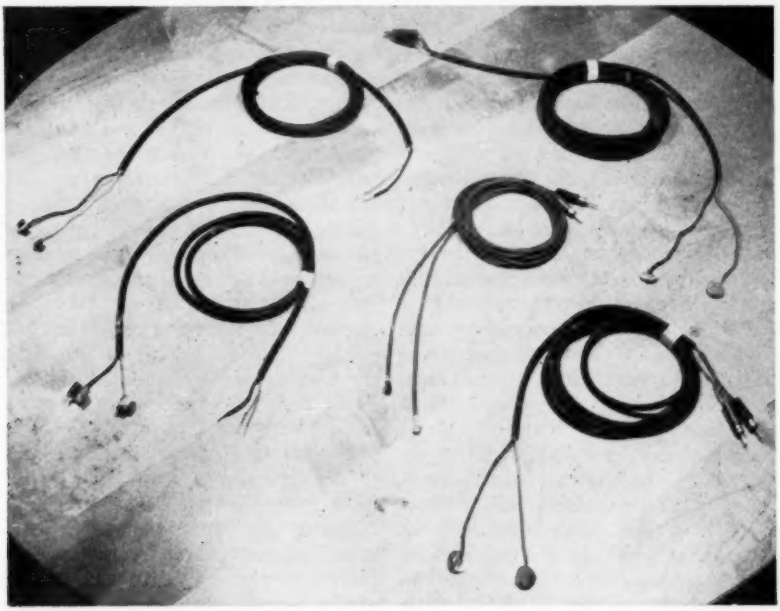

FIGURE 4. Types of electrodes for PGSR audiometry.

inches wide is shaped by hand pressure to fit the child's fingers snugly.

Electrodes for pickup from the foot, and for the shock, are held in place by 1-inch adhesive tape over folded 2 × 2 gauze pads. Four 6-inch strips of tape are overlapped for the shock electrodes, and placed so that the two electrodes are about 1½ inches apart. All electrodes are coated with a paste of kaolin in a saturated solution of zinc sulfate. For the finger electrodes, ½-inch strips of tape of appropriate length are wrapped around the electrode and the finger. In all instances, care should be taken not to interfere with the blood supply. It is well to be as unobtrusive as possible in 'wiring' the child. Some children are curious and interested; others are better handled when their attention is centered on a toy.

Dermometric Measurement. When the electrodes are in place, while one member of the team is engaging the child's attention, a direct skin-resistance measurement is made by a dermometer. This instrument uses the same battery voltage and produces the same induced current as does the bridge circuit of the galvanometer, and readings are made in thousands of ohms. In a room temperature approximately 70° F., normal skin resistance for children older than 5 to 6 months ranges between 50,000 and 120,000 ohms. During very hot weather, and conditioned by various deviant physiologic and psychologic states, skin-resistance may be as low as 5,000 to 25,000 ohms. It is relatively high in infants up to 6 months of age. In making these dermometric observations, one looks for normal range versus partial or total denervation, and for the general level of resi tance. If there is evidence of denervation, the pickup electrodes are shifted to a better spot; the information gained is immediately helpful in prejudging the necessary input-resistance setting of the amplifier, and the preselection of balance in the bridge-circuit.

Handling the Child

The detail of handling the child during the test may vary tremendously. For most children under 18 months, an appropriate soft toy is useful. Sometimes attention may be caught and held by slow movements of hands and toys. In general, it is well to maintain fairly passive behavior (see Figure 2). Occasionally a nursing bottle helps, provided that it does not promote a kind of behavioral curtain behind which the infant retires. Some children come in with a favorite blanket or toy, and when the familiar article is firmly clutched the child retires from the situation and shows a rise in skin-resistance and a behavioral passivity that is akin to the sleep state. In this state, PGSR responses are extremely limited, and the toy or blanket must be removed.

There is more to be done with children over 18 months (see Figure 3). Activity is centered on the tray or table-top. Toys or games may be used, but whether it is better to use the kind that the child can manipulate, or those that are handled by the clinician, is a choice that must be determined by experience with the child under test. Although the use of several toys simultaneously should be avoided, it is sometimes necessary to work through a considerable number within 45 minutes. The main idea is appropriate centering of attention (distraction from the test situation, if one wishes), in order to control the emotional stimuli present in the situation.

Among the toys that have proved useful (see Figure 5) are: (for the

FIGURE 5. An array of useful toys.

child up to 18 or 20 months) oilcloth stuffed animals; Holgate Color-cone and pyramid blocks; Playskool and Holgate pegboard; bottles; lollipops; a circular rattle with bright, moving decorations; 2-inch bright, wooden blocks; beads; and (for the child older than 2 years) puzzles suitable to the age—Holgate and Playskool, cardboard or wood, complete forms or cut-outs; beads, wooden trains (a useful, small array is made by Skaneateles); a Bill Ding set; Playskool landscape pegs; small cars, trailer-trucks and the like; a basket of objects from the dollhouse; a dump truck; plastic drawing board; crayons and a coloring book; modeling clay; a plastic 'egg'; hand puppets; various books and dolls.

Speed of movement is important and must be controlled; slow motions are better and with many children promote a kind of fixation that is salutary. Under most circumstances it is well to avoid the child's eye; an exception is the use of eye contact for reassurance. It is the responsibility of the person with the child to control movements, to check on overt muscular reactions, to pace his actions however best to promote a steady, normal PGSR pattern, and to keep in constant touch with the clinician at the instruments. The clinical team will work better when both members have had experience with both sides of the test situation, handling the child and controlling the instruments. As the situation demands, changes must be made in the general situation. For instance, it may become apparent that a child is highly distracted by rapidly changing visual cues; in PGSR parlance, this means that whenever the child's visual centering is changed, there is a sudden reduction of skin resistance. This swings the galvanometer to the positive phase, and there

is usually a sharp, reactive surge in the opposite direction. The net result is so much activity that the significant responses (those to sound stimuli) cannot be read sharply. How this situation may best be met is highly variable. Sometimes it can be controlled when the clinician shifts the child's attention to the headphone, and they lean over, head-to-head, to listen together. The main idea of handling the child is to promote a steady PGSR pattern, so that responses to sound may be interpreted accurately with as little as possible of extraneous wave forms.

Occasionally it is necessary deliberately to disturb the child under test. A few children are so constituted that they retire behind a kind of behavioral curtain; this may be reflected in highly restricted activity of the sympathetic nervous system, such as is typical of an approach to the sleep state, or in certain types of catatonia. A few children have exhibited what appears to be a dormant condition, so far as sweating is concerned, then, after a thumb is popped into the mouth (or sometimes a lollipop), the sympathetic reactions come alive much as though one had turned a floodlight on a darkened room. These problems must be met as they occur, according to the knowledge and experience of the test team.

Conditioning

The conditioning process is the key to the test situation. In the very young child, particularly, adaptation is very rapid for a stimulus so relatively insignificant as a pure tone. Ideally, the conditioning process must be designed to combat adaptation, and to set up a 'habit' of involuntary responses, whenever the conditioned stimulus (the pure tone) is presented. In Pavlovian terms, the increased sweating as a reaction to the pure tone is motivated by the light faradic shock which follows the tone during the conditioning process; that is, the sweating is initiated by the tone in anticipation of the shock which is part of the experience for the child. Ordinarily there is a time lag varying from ½ to 1½ seconds between the presentation of the tone and the current changes brought about by the sweat gland activity. Therefore, inasmuch as it is necessary to read the wave forms which give evidence of this change after the tone, an interval of 3 to 4 seconds is maintained between the tone and the shock in the early stages of conditioning. This constitutes a weaker conditioned reflex (i.e., more rapid adaptation), but is necessary clinically, and has proved to be workable psychologically.

The initial tone is usually 500 cycles at a level well above threshold (the necessary level has already been estimated by watching gross responses in the soundproofed room). Most children have residual hearing for this frequency; the use of a lower frequency confuses the situation with tactile sensations. Generally, it is easier to condition the child with a moderate hearing loss than one with a profound loss. For the child with enough hearing to have some acquaintance with ambient noise (if only the loud noises in his life), sound, *per se*, has some meaning; not so, usually, for the child with a profound loss (of the order of 85 to 100 db)—for him, the presence of the loud pure tones is made meaningful as the test progresses. Once there is evidence of a conditioned reflex—that is, when there is a definite wave form consistently present after the tone, before the shock—the shock is employed according to

the clinician's judgment as a reinforcement to offset adaptation, variable attention, or whatever else impinges adversely on the test situation.

At the outset, after the electrodes have been connected and the skin resistance has been measured, it is well to take a few minutes to study the pattern of the child's responses before the test is begun. Useful observations may be made about the nature of the pattern, the normalcy of the wave forms (6 to 12 per minute is a normal frequency), the 'emotional' state of the child, his reaction-time to overt stimuli, and the like.

Short bursts of the test-tones are usually more sharply stimulating than a long sustained tone (and are probably louder psychologically, and less fatiguing). Other things being equal, one may expect to use every known audiometric technique through a large case load, in order to achieve something approaching t h r e s h o l d acuity. Some children respond well to a regular, rhythmic presentation of the tones, as is true of audiometry in general; others respond more sharply to a varied presentation which seems to promote alertness to the test-tones. The paired signals—tone and shock—are continued until there is a consistent, dual wave form on the recorder. Initial shock is presented at a sub-threshold voltage, and the strength is increased until a definite wave is evoked; this is a kind of neuromuscular contraction to which the galvanic response is very rapid. In technical terms with regard to the pleasure-pain dichotomy, this use of shock belongs to the painful category; actually, when the shock is appropriately used, it is not painful but startling. Too strong a shock stimulus is both unnecessary and detrimental to the test procedure. The use of shock does not traumatize, moreover, nor does the whole test situation when it is clinically well handled. Children are retested constantly, some for the third or fourth time, with rejection of the test situations a rare occurence; in common sense terms, this is probably the best yardstick for judgment that is available. This does not mean that the PGSR test situation is implicitly nontraumatic (any examination, including the attempt to take body temperature, can be made traumatic); it does mean that the use of a light faradic shock, *per se*, is not traumatic. This is a state of affairs that is perhaps better demonstrated than argued.

The processes of adaptation need to be studied with care, and considerable research has been done to furnish data that may guide one's thinking. Most adults have had the experience of spending a restless night when trying to sleep in unfamiliar surroundings, only to find that the situation is not nearly so trying the second night, and that, by the third, one may sleep peacefully through what initially constituted a most disturbing racket. This is adaptation in a gross form. In general, our habits of audition are mediated by the 'mind' and are inhibited for a variety of sounds in environmental stimuli. We become proud of our ability to concentrate attention on some appointed task in an environment of children's voices, doorbells, phonebells, radio and television. We learn early, if we do at all, to pay attention to the significant signal and to disregard the transient sound. So, with many children who have a moderate-to-severe hearing loss, there may be a strong PGSR response to the first two or three intense test-tones, then a sharp reduction of the response thereafter. This feature of adaptation

must be understood, met, and offset for the purposes of clinical audiometry with infants and young children. This is the rationale of the use of faradic shock as the unconditioned stimulus in the tradition of the Pavlovian conditioned reflex; the shock constitutes the warning, the imminent event, that tends to lessen the natural tendency to adaptation.

Discussion

There are many kinds of psychogalvanometers. That pictured in Figure 1 is most familiar to the present writers.[1] With the General Radio 715-A Direct Current Amplifier, one may adjust the input resistance (arranged in multiple steps of 10^n ohms) according to the skin resistance under the electrodes. The higher the input resistance of the amplifier, the greater the swing of the needle as the currents in the bridge are affected by the sweat gland activity of the child. Care must be taken that the bridge, amplifier and recorder remain in good electrical calibration, and that during the time of testing the electrical balance in the bridge is readjusted according to what is happening to the patient's sympathetic nervous system. Obviously, with the Féré technique, these are not absolute factors, but highly relative reflections of function. Time must be allowed for the return to normal of the sweat gland activity following stimulus (about 15 seconds in most instances). If, as the test proceeds, there is a material change in the patient's skin resistance, in either direction, this condition must be balanced by suitable adjustment of the variable potentiometers in the bridge, or by changing the input resistance.

[1]For a description of the galvanometer and a discussion of the circuit, see (*1*).

These features of the instrumentation are directly related to what is happening in the child's behavior, and must be checked constantly with the clinician who is handling the child. As matters stand, any positive wave form which occurs within acceptable time-relations to the presentation of the test-tone is significant as a response. In some instances, as threshold is approached, even a pause in the negative swing of the galvanometer may be a significant response. The wave forms one learns to look for are typical, however, and not too difficult to differentiate from those which reflect responses to other than the controlled auditory stimuli.

For these reasons, one does not learn to do PGSR audiometry by reading about the procedures; they must be learned from experience. In this sense, the performance of the test is a skill that is somewhat analogous to the skill of a surgical team; a technique of surgery may be well known, followed and modified, yet everybody is not equally successful in carrying out known procedures. It is doubtful that PGSR audiometry, as it is presently known, will ever be available as a routine procedure in a physician's office, or in a school system.

The suggestion has been made that a variety of audiometric techniques may be necessary in order to assure a reasonable approach to threshold acuity. The classical technique is useful, whereby, having begun with a tone well above estimated threshold, the tester attenuates step by step until no positive responses are forthcoming; then threshold is determined by crossing and recrossing the point at which the least intensity elicits a positive wave form on the recorder. As the child responds, it may be necessary to change the timing of the

signals; either a regular or an irregular rhythm may prove better as the test proceeds. Not infrequently, as threshold is approached, special care must be taken to limit the physical activity of the child; in this instance, 'listening' head-to-head with the child may prove to be a useful device. The shock is used at need for reinforcement. Some children require none after the early conditioning process; others need frequent nudges to heighten the general physiologic tone. These variations are no different in kind from what is necessary in clinical audiometry in general. Even with a cooperative adult in a test situation, one cannot assume the truth about auditory thresholds, he must seek it out.

When it is pertinent to the needs of the test, opposite ear masking may be used with no disturbance to the basic procedure. Masking is necessary whenever the two ears differ by 20 to 25 db in order to rule out the better ear while the worse one is being tested. It is well to introduce the masking tone early in the PGSR procedure, d u r i n g the conditioning process. If binaural headphones are tolerated by the child, there is no reason why opposite ear masking at a reasonable level should not be used routinely. The masking tone simply becomes part of the environment, and adaptation to it is very rapid.

Some experimenters e m p l o y an automatic timer for delivering the test-tones and shock. There may be some virtue in this, but there are, as well, some drawbacks. In terms of the child's behavior, and varied responses which are apt to be reflected in the galvanic 'picture,' there are many variables in the test situation which must be recognized and met in handling the child; overt movement, shifting of attention, visual stimuli, emotional reactions—all these elements of the situation must be met and controlled efficiently. It is difficult to understand how automatic stimulus control can promote the suitable meeting of these variables, for a good pure tone hearing test involves much more than the mechanical features of the middle ear and the cochlear system.

The same idea applies to the task of interpreting responses of children with special problems. In handling the cerebral palsied child, the child with petit mal, the child with autistic behavior (the schizoid), and some of those with evidence of cerebral degeneration, the accurate interpretation of the timing of response is particularly difficult. Many of these children are under narcotic or sedating medication which inhibits the responses of the sympathetic nervous system. In general, PGSR testing cannot well be done with children under dosage with any of the barbiturate series, and they must be free from such drugs for at least 48 hours prior to testing. On the other hand, there are especially active children, with an overactive sympathetic nervous system, for whom a ¼-grain of luminal 20 minutes before the test is just enough to bring them to a manageable state; unfortunately, this group of children is very small. An appropriate sedative that did not seriously interfere with PGSR response would be a great boon in speeding the handling of a large clinical load.

Conclusion

Much is going on, related to the procedure, about which some basic functions are as yet unknown. Nobody yet knows precisely what causes the changes in sweat gland activity; little is known about quantification of

these sweating responses. A great deal more biophysical and biochemical inquiry is needed to define some of the basic processes by which the auditory mechanism and the sympathetic nervous system are related. Yet, the procedure does work clinically, and supplies needed information.

The most urgent need in terms of audiometry is to get useful facts about the child's hearing mechanism as early as possible in his development. When a threshold audiogram is available for a 12-month-old, or a 26-month-old, a 42-month-old child, or a 10-year-old child who has been institutionalized for irrational behavior and aberrant development, one has something concrete to think with in terms of differential diagnosis, medical care, surgical procedures, and an educative plan. From such audiometric data, speech-hearing potentials may be generalized, and the nature of the audiometric curve studied for information with which better to understand the relation of the affected auditory mechanism to language and speech development. Suitable stimuli for this development can be worked out with parents. The question of the use of a hearing aid can be answered in fairly definite terms, with due regard for the effect of nerve damage and the factors of learning in communication. The obvious facts of child development and behavior suggest that the earlier special problems (like hearing impairment, delayed speech, the effect of brain damage and so forth) are recognized, measured, differentiated, and evaluated, the better should be the over-all development of the child. The age of five years is much too late to begin training the child with impaired hearing — of various types and extents—for the achievement of his best possible potential in communication, language, speech and social maturity. For those who are committed to this philosophy and to the management of the child-patient based upon adequate diagnosis as a fundamental step, PGSR audiometry offers an invaluable clinical tool.

Reference

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A Ten-Year Survey Of Speech Disorders Among University Students

D. E. Morley

A TOTAL of 33,339 incoming and transfer students at the University of Michigan have received speech examinations during the past 10 years. These examinations have been made by personnel from the University Speech Clinic as part of pre-semester orientation period activities. By keeping records of test results of each period, it has been possible to accumulate data concerning the number of students tested, the number who were screened out (those judged to be clinical cases having noticeably defective speech), and the distribution of various types of defective speech among the clinical cases. In addition, sex ratios have been computed and comparisons have been made with the data presented by other investigators of defective speech in school populations.

The Office of Student Affairs of the University of Michigan is charged with the planning of orientation periods. After consulting with all interested persons, including deans, counselors, doctors, the registrar, the Speech Clinic, and various student groups, the director of orientation details the program. The program affects incoming and transfer students in Business Administration, Dentistry, Dental Hygiene, Education, Engineering, Music, Natural Resources, Pharmacy, Public Health, College of Literature, Science and the Arts, and Freshman Nurses. As one of the orientation period procedures, audiometric and speech tests are given. This article is concerned with the results of the speech examinations.

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Examination Procedure

Until two years ago, orientation period speech and hearing screening tests were conducted in a building located centrally on the campus. Because of unsatisfactory noise conditions, the inconvenience of moving equipment and supplies, and the rather cumbersome procedure for arranging re-checking examinations, however, the testing was transferred to the Speech Clinic. Now both screening and re-checking speech and hearing testing are done the same day and the whole procedure has been greatly expedited. As currently arranged, two groups of students arrive at the Speech Clinic during the orientation period at scheduled intervals in groups varying from 15 to 30. The groups are ushered into classrooms where they are met by several speech examiners of the Clinic staff. Each student is

given two blanks to fill out, one for the speech examination and the other to be used at the time of the hearing test. The speech blank requests the following information:

Name
Age
Sex
Ann Arbor Address
Home Address
Languages spoken in home
What languages do you speak?
Have you any organic defect that interferes with speech (deafness, paralysis, irregular teeth, tongue-tie, nasal obstructions)?
If you ever had a speech examination, fill in the following:
Where?
How old were you?
List any speech defects found.
What recommendations were made?
If you have, or ever had a speech defect, answer the following:
Describe defect.
Age when first noted.
How long did it last?
Describe what has been done to improve your speech.

The screening examiner reviews the sheet presented by the student, asks him to read selected testing material, and engages him in a short, informal conversation. If defective speech is reported by the student or if it is detected by the examiner, note is made of it on the speech form, and the student is directed to another room where he meets another speech examiner. There a more detailed analysis is made of the speech, a judgment

TABLE 1. Numbers of university students tested and clinical cases found over a 10-year period.

Year	*Numbers Tested*			*Clinical Cases*		*Male Cases*		*Female Cases*	
	Total	*Males*	*Females*	*N*	*%*	*N*	*%*	*N*	*%*
1941 (F.)	3220	1987	1233	257	7.98	161	62.64	96	37.35
1942 (F. Sp.)	3095	1910	1185	161	5.2	111	68.94	50	31.05
1943 (F. Sp. Su.)	2264	732	1532	121	5.3	58	47.93	63	52.06
1944 (F. Sp. Su.)	2251	646	1605	68	3.02	36	52.94	32	47.05
1945 (F. Sp. Su.)	2836	1095	1741	151	5.32	101	66.88	50	33.11
1946 (F. Sp. Su.)	4432	3311	1121	101	2.3	74	73.26	27	26.73
1947 (F. Sp.)	3469	2238	1231	118	3.4	95	80.50	23	19.49
1948 (F. Sp.)	4357	3093	1264	75	1.7	60	80.00	15	20.00
1949 (F. Sp.)	3700	2403	1297	48	1.29	36	75.00	12	23.40
1950 (F. Sp.)	3362	2073	1289	107	3.18	78	72.89	29	27.10
1951 (Sp.)	353	242	111	13	3.68	8	61.53	5	38.46
Total	33,339	19,730	13,609	1,220	3.85	818	67.50	402	32.34

FIGURE 1. Fluctuation of incidence of clinical speech cases through ten years.

is made as to whether the speech is clinical or non-clinical in nature, a high fidelity tape recording is made of each clinical case (later to be dubbed to an acetate disc), and the remedial speech classes for university students are described. Clinical case students are advised to enroll in one of the remedial classes. Counselors of students found to have defective speech, the University Health Service, and the director of orientation are advised concerning the outcome of the speech examinations. The names of the students with defective speech are included.

If no defective speech is reported or detected, the student is directed to the hearing examination division where his hearing is tested.

Results

Table 1 shows the distribution of clinical speech cases among male and female incoming and transfer students over a 10-year period. The average incidence of clinical speech cases was found to be 3.85 per cent of the total of 33,339 students examined. In terms of sex distribution, 67.50 per cent of the clinical cases were males, 32.34 per cent were females. The ratio, then, was approximately 2 to 1. Figure 1 is a graphical representation of the yearly totals.

Table 2 shows the distribution of types of speech disorders among the clinical cases by years. The number of each type of disorder includes both males and females. It will be noted that in the years 1941 and 1945 the miscellaneous category, principally foreign accent cases, was comparatively large. Usually foreign students are referred directly to the English Language Institute of the University, or the International Center, for training in the use of English and are not included among those considered to have defective speech. In 1941 and 1945, however, a number of the foreign students were included and enrolled at the Speech Clinic for speech training.

As an average, among all the clinical cases, 50.70 per cent were articulation cases, 25.48 per cent were stutterers, 15.04 per cent were voice cases, and 8.75 per cent were miscellaneous (cleft palate and foreign accent). Figure 2 graphs these percentages.

Discussion

This study reports that 3.85 per cent of incoming and transfer students were found to have defective speech. Speech surveys conducted in public schools report higher percentages. Pronovost (*6*), reporting results of speech surveys in New England schools, found that 7.8 per cent of the 87,288 individuals tested were handicapped in speech. Carrell (*2*) indicated that a percentage study showed that 10 per cent of all the children seen had speech defects. In Davis' study of Akron, Ohio public schools in 1937 (*3*), six per cent of the children were found to be definitely handicapped in speech. After surveying 10 representative schools in Cleve-

TABLE 2. Distribution of types of speech disorders among the clinical cases by years.

Year	Total Cases	Articulation N	Articulation %	Stuttering N	Stuttering %	Voice N	Voice %	Miscellaneous N	Miscellaneous %
1941 (F.)	257	119	46.30	31	12.06	67	26.07	40	15.56
1942 (F. Sp.)	161	94	58.38	35	21.73	32	19.87	0	0
1943 (F. Sp. Su.)	121	76	62.80	20	16.52	18	14.87	7	5.78
1944 (F. Sp. Su.)	68	30	44.11	26	38.23	6	8.82	6	8.82
1945 (F. Sp. Su.)	151	82	54.30	29	19.20	16	10.59	24	15.89
1946 (F. Sp. Su.)	101	49	48.51	22	21.78	20	19.80	10	9.9
1947 (F. Sp.)	118	64	54.23	37	31.35	11	9.32	6	5.08
1948 (F. Sp.)	75	36	48.00	24	32.00	10	13.33	5	6.66
1949 (F. Sp.)	48	19	39.58	16	33.33	8	16.66	5	10.41
1950 (F. Sp.)	107	51	47.66	25	23.36	28	26.16	3	2.80
1951 (Sp.)	13	7	53.84	4	30.76	0	0	2	15.38
Total	1,220	627	50.70	269	25.48	216	15.04	108	8.75

land in 1946, Irwin (*4*) reported an incidence of 7.7 per cent of defective speech. In *Speech Handicapped School Children* (*5*), Curtis states that 5 to 10 per cent of school children have articulatory defects and one or two per cent present significant voice problems. In the same book Johnson states that stuttering affects .6 to 1 per cent. The total of these percentages shows an incidence of 6.6 per cent to 13 per cent of speech defects. Carhart (*1*), describing the results of a survey of speech defects in Illinois high schools, reported that 20.8 per cent of the students had articulatory, voice, or rhythm difficulties. The 144,570 students included in this survey were judged by high school teachers, of whom only one in 10 was a speech teacher.

If one acknowledges the smaller incidence of defective speech among incoming and transfer university students as compared with that found in grade and high school populations, some conjecture arises as to what factor, or factors, are operating to cause this reduction. One of the first possibilities which may account for the inequality could be a difference in

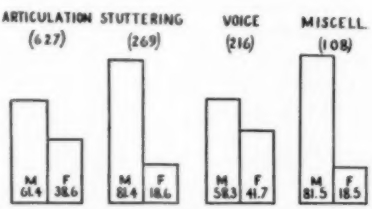

FIGURE 2. Percentage distribution of types of speech defects. Total cases—1,220. (M—Males; F—Females.)

screening method, testing conditions, and the specialized personnel doing the testing. Variations of these factors are likely from survey to survey.

Secondly, one might look upon the group of young people entering the university as a select group, at least the upper fourth in academic ranking. One might postulate that fewer speech defective pupils make the grade academically, or at least that fewer of them seek higher education. One might see defective speech operating as a selective factor in a number of instances.

In the third place, one might visualize a maturation factor operating beyond the high school years. Roe and Milisen (7) have shown that the incidence of defective articulation drops from grade one to grade two to grade three. As sheer conjecture, one might postulate that there can be an expected decrease in the number of speech defectives even beyond the last year of high school. Since the time interval between completion of high school and the beginning of university attendance is rather short, however, even if such a decrease could be proved, discernable reductions are unlikely.

Finally, and applicable to the University of Michigan which draws the bulk of its students from Michigan, New York, Ohio, Illinois, and New Jersey, where speech correction programs continue to develop in the public schools, the optimistic person might want to surmise that the effects of public school speech correction programs are to be seen.

Examination of Figure 1 reveals that from 1941 to 1949 there was a general, steady decline in the incidence of clinical cases. Some upswing is noted for the years 1950 and 1951. Here, too, one might want to conclude that one or more of the factors mentioned above provide possible explanation for this curve. Furthermore, it is of interest to remember that during the decade represented, speech correction has shown real growth in screening procedures, coverage, methods, and the number of trained examiners.

Table 1's tabulation of total males tested and total females tested during the war years shows that in 1943 the females outnumbered the males by 2 to 1, in 1944 by almost 2.5 to 1, and in 1945 by more than 1.5 to 1. In terms of the percentage of total clinical cases found during those years, however, it can be seen that in 1943, although the males were outnumbered 2 to 1 by the females, the males accounted for 47.93 per cent of the clinical cases. The comparison is even more startling in 1944 when the males were outnumbered by almost 2.5 to 1. Then the males accounted for 52.94 per cent of the cases. This same sort of discrepancy appears again in 1945. Although outnumbered by more than 1.5 to 1, the males accounted for 66.88 per cent of the clinical cases.

When the comparative probability of the occurrence of defective speech is calculated for these years, it is found that in 1943 the probability of a male having defective speech was 2 to 1 over the female, in 1944 it was 3.4 to 1 over the female, and in 1945 it was 3.1 to 1. This means, then, that although the number of males was less than the females during 1943, 1944, and 1945, among those males there was a higher probability of defective speech than in other years. For example, in other years such as 1948, 1949, and 1950, the probability of defective speech among the males as

compared to females was 1.6 to 1, 1.8 to 1, and 1.7 to 1 respectively.

It is interesting to speculate as to what factor or factors operated to account for the greater probability of defective speech among males during the war years. Some sort of selection resulted in there being a greater probability of defective speech among the males who did enroll at the University than is otherwise usual.

From Figure 2 it is readily apparent that for each sort of speech problem, the males outnumbered the females. In the articulation cases, the ratio is 1.5 to 1; in stuttering, 4.3 to 1; in voice cases, 1.4 to 1; and in the miscellaneous category (foreign accent and cleft palate speech) 4.9 to 1. The predominance of defective speech among males as compared with females seen in this study conforms to the pattern demonstrated by other surveys.

Summary

Results of 10 years of orientation period speech examinations which included 33,339 incoming and transfer students at the University of Michigan show the following:

1. The average incidence of clinical speech defective cases (those judged to have noticeably defective speech) was 3.85 per cent. Speech surveys which have been conducted in public schools have shown a greater incidence of speech defects. In seeking an explanation for the reduction at the university level, some conjectures are made concerning the factor, or factors, responsible: (a) Differences in screening method, testing conditions, personnel doing the testing may be responsible. (b) The reduction may indicate that the incoming and transfer students comprise a select group less likely to have defective speech. (c) There is a possibility, although slight, that a maturation factor operates beyond the high school years. (d) The effects of public school speech correction programs may be being seen at the university level.

2. As an average, among all the clinical cases, 50.70 per cent were articulation cases, 25.48 per cent were stutterers, 15.04 per cent were voice cases, and 8.75 per cent were miscellaneous cases (cleft palate speech and foreign accent).

3. In general, there has been a decrease in the number of speech defectives screened out during the 10-year period, but a sizeable number continue to appear each semester.

4. During the war years, although outnumbered by the females, the males accounted for the majority of speech defectives discovered. When the comparative probability of occurrence of defective speech was calculated for those years, it was found that there was a greater probability of speech defects among the males than in other years. This suggests that some sort of selective factor operated to account for the fact that defective speech was more prevalent among the males enrolled at the University during the war years than would be expected normally.

5. In terms of the percentage of male and female cases for each type of speech defect, the males outnumbered the females. This conforms to the pattern generally found in other speech surveys.

6. It is apparent that such speech examinations need to be continued as part of the orientation program for: (a) Speech handicapped students con-

tinue to enroll at the University and should be discovered early. (b) Remedial classes provided at the University can be more generally useful to a larger group of handicapped students if an organized effort is continued to discover and to advise them concerning the available remedial services.

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Congenital Aphasia: A Case Report

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M. Lois Bibey

THE ESTABLISHMENT of Veteran Administration aphasia clinics has given a long needed impetus to the study of speech and language retraining for the individual who has become aphasic. Although there have not been extensive studies on 'congenital aphasia,' it is indicated that experience gained through *retraining* therapy with adult aphasics may be applied to training therapy for children who present aphasic-like symptomatology.

The term 'aphasic-like' is used instead of 'aphasic' because it is difficult to make a diagnosis of aphasia[1] in a child who does not present definite neurological symptoms. A significant number of exogenous children present no accompanying motor or paralyzing involvements. In many cases, neurological examinations do not produce supportive evidence for neuropathologies. Without these positive findings there are those who would be reluctant to make a definite diagnosis of aphasia. Clinically, however, these children present aphasic-like symptomatology. When these children respond to specialized aphasic training after having failed to respond to normal school teaching methods, more support is gained for the tentative diagnosis of congenital aphasia.

Other studies (*3*, 7) have indicated that the neural mechanisms involved in adult and congenital aphasia are quite different. Therapeutic techniques, however, may be similar. Since speech and language are learned processes and since the only avenues available for learning are through the senses, the basic framework upon which to build therapy becomes obvious. It is the purpose of this paper to present some observations in diagnosing and working with Bobby, one of these 'aphasic-like' children.

Bobby, born in 1940, was referred to The Training School at Vineland at the age of 10.4 years because he was making no progress in the public school. At this time he was in the second grade and was 'a considerable problem in the class as the work was far beyond his ability.'

Previous Examinations

Bobby had been given a psychological examination in May, 1946. Testing was difficult because of his

[1]By the term 'aphasia' is meant a central linguistic symbolic disturbance, be it developmental or acquired. This is described in an earlier paper (*4*).

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immaturity, shyness, and baby talk. It was indicated, however, that he was retarded. In March, 1948 he was found to have an IQ of 68 on the Binet. In June, 1949 he was retested and had a test level of a little over six years. Because speech was so retarded, a possible hearing loss was suspected. One examiner did not believe that a hearing loss affected the functional level because 'some time was spent with him on the playground and he answered questions put to him in an ordinary conversational tone of voice and he didn't turn his head to read lips.' To check on the possibility of a hearing impairment he was referred to an ear, nose, and throat clinic for examination. This clinic reported that the examination was essentially negative and an audiometer test was not recommended because it was felt that 'he was backward and the results of this would not be particularly significant.' Recommendation was made for institutionalization.

Family History

Bobby came from a broken home. Both parents were said to be of average or above average intelligence; however, the four children were neglected by the mother who has since disappeared. The parents were divorced and the father remarried. In the new home environment there was no place for a retarded child, so Bobby was removed to a foster home. He later returned to the home of his grandparents.

Developmental History

After a 10-month pregnancy, labor was complicated by a long and difficult breech presentation. Instruments were used. This was the fourth pregnancy, but third birth, with one miscarriage before this birth. Although details are not available, it has been reported that there was 'deficient animation' at birth and that there was some danger of losing Bobby during the first five weeks of his life. A later medical report indicated no known paralysis, convulsions, epilepsy, or endocrine dysfunctions. There was good general health with no abnormal neurological or psychopathological conditions. The Wasserman was negative. Although it was reported that the child had not suffered brain damage from accident or disease and that the etiology was 'unknown,' it is felt that the nature of the birth, the difficulties following the birth, and the subsequent developmental history suggest a possible birth injury. Development was slow. He sat at 12 months, walked at 15 months, and talked at five years.

Psychometric Examination

Psychometric examination at the time of admission to The Training School resulted in a diagnosis of borderline defective. He had a mental age of 6.8 years and an IQ of 65 on the Binet. His Social Age on the Vineland Social Maturity Scale was 7.6 years. Bobby seemed to be much more relaxed during the performance of manual tasks than during the tests requiring verbalization. His Wechsler-Bellevue Performance IQ was 83. On the verbal-type tests he was evasive, less spontaneous, and he showed signs of fatigue and frustration. The examining psychologist reported significant failure in symbol recognition. Bobby could identify few letters, and even though he could write his own name, he could not identify the letters in the name. The etiology of the symptomatology was not known. The early history was positive for an

exogenous origin. It was felt that the retardation of speech development suggested the presence of some specific impairment.

Speech Examination

When Bobby came to the speech clinic in July, 1950, he was a shy, immature boy. His phonetic analysis showed evidence of severely retarded speech development. He had at the time of the speech examination many substitutions, omissions, and distortions. Speech at times was almost unintelligible. Bobby was given an audiometric examination, but due to inconsistent responses, his audiogram was not considered to be valid. He did, however, show evidence of having difficulty in hearing the higher frequencies. It was decided that Bobby should be given a period of adjustment before a re-examination. At this point it was felt that his speech pattern was not due to his hearing impairment.

From July until September, Bobby was helped to become adjusted to his new life at the school. During this period the medical department began treatment to eliminate an anemic condition which was found to be present at Bobby's initial medical examination. Bobby responded well to this treatment and he began a gradual physical building up. The cottage parents reported that Bobby seemed to be making a good adjustment to his new environment. He fitted in well with his group and displayed some qualities of leadership. He took an active part in swimming and other games.

In October Bobby returned to the speech clinic for re-examination. He was still quite shy and reserved, but he seemed more mature and physically he was in a much improved condition. His speech was again classified as delayed development with substitutions, distortions, and omissions during spontaneous speech. This time he gave a much better response to audiometric testing. Five audiometric examinations were administered at intervals in order to insure a valid audiogram. Since the audiograms were essentially the same, Figure 1 is probably a reliable picture of Bobby's hearing pattern. There was no hearing in the left ear beyond the 1024 frequency.

The audiogram shows a severe hearing loss. It may be a recent impairment in hearing, perhaps progressive in nature. This impression is based on two facts: (1) Bobby's articulation in spite of his delayed speech development indicates that he must have had better speech at one time; and (2) it was reported in 1946 by a medical examiner that 'the hearing loss was not an important factor.' The cause of the hearing loss is not known. In 1947 Bobby is reported to have had pertussis and diphtheria and in 1949, measles, but details of the illnesses are not available. No abnormal neurological conditions were evident at the time of the medical examination in 1949. There have been no reports of

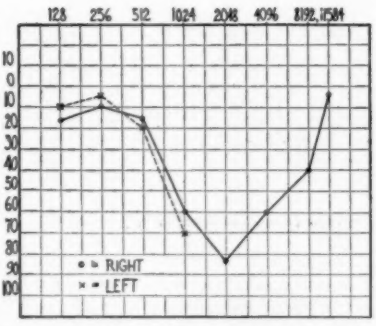

FIGURE 1. Bobby's audiogram showing marked loss for high tones.

significant accidents or injuries since that time. The initial medical examination at The Training School showed some evidence of adenoidal tissue and a later examination showed a peculiar shaped canal in the right ear. The speech pathologist suggested that Bobby be sent to an otolaryngologist for further examination. This suggestion was carried out and a recommendation was made by the specialist that the adenoidal tissue be removed. In January, 1951, the surgery was performed. Since the operation Bobby has been given monthly audiometric examinations, but to this date there has been no significant change in the hearing picture. The vitamin B_{12} which Bobby has been getting for his anemic condition apparently has had no effect on his hearing loss. In view of Anderson's study (*1*), large doses of vitamin A are now being administered and audiometric studies will be continued.

Diagnosis

Shortly after the first speech reexamination it was noted on the basis of personal observation that Bobby was manifesting aphasic-like symptoms. There was a slowness of response that did not seem to be a result of his auditory acuity deficiency; there was an inability to recognize a written symbol within a short period after it had been presented to him; and he could not yet identify the letters of his own name or the alphabet. This low level of language development did not seem commensurate with his relatively higher performance tests. After a trial period of therapy, Bobby was asked to write the letters of the alphabet which were dictated to him. He still made reversals and substitutions for *m*, *j*, *q*, *b*, *i*, *n*, and *z*. He made no response for *r*, *k*, *l*, *t*, and *u*.

Along with the hearing impairment and generalized dyslalia, a tentative diagnosis of congenital aphasia was made on the basis of the following considerations:

1. Indications of birth injury with brain damage and slow developmental history.
2. Delayed speech development with complete alexia and agraphia at the age of 10 which was not commensurate with his general functional level.
3. The exclusion of hearing impairment as an etiological factor in the delayed speech development.
4. The discrepancy of the verbal and non-verbal psychological tests and the significantly more relaxed pattern of behavior on the performance tests as has previously been described.

There was now the choice of refusing to accept Bobby at the speech clinic because of his multiple handicaps or accepting him in the belief that he would profit by special training. Therapy was chosen for many reasons (*2*): for the clinical research value of such a problem, for the opportunity of experimentation, but mainly because of Bobby himself. There was a quality in Bobby which indicated therapy would be worth while for him. In boys like Bobby there is a certain awareness of reality that is apparent in the responses made during the first interviews. Sometimes that awareness is actual, sometimes it is superficial; trial therapeutic sessions determine which it may be. In this instance there apparently was a true awareness. Bobby does have some insight into his problem and he seems to realize why he comes to the speech clinic. He is a boy who is highly motivated to learn. He has great pride

in his accomplishments and even though he is sometimes faced with possible failure, he does not hesitate to attempt any new task. When he is confronted with a problem which is difficult for him, he will stop, grin, and say, [aɪ dɔnʌ dɛt tʌk]. Then he picks up his chalk and resumes his work. Bobby is an alert, cheerful boy with a well-developed sense of humor. With him there is not the frustration and fatigue reaction which is seen with some other aphasic children who receive therapy at the speech clinic. In spite of his hearing handicap, Bobby, on the whole, is brighter and quicker to grasp a situation than are most of the children in the clinic.

Speech and Language Therapy

It was apparent that a therapeutic program would have to provide for his aphasia, hearing deficiency, and generalized dyslalia. An audio-visual-kinesthetic approach was necessary. The book, *Remedial Training* (5), was very valuable as an aid to over-all therapy. From it various adaptations may be devised for individualized therapy. In the beginning it was found that Bobby could not grasp the concept of a written symbol combined with vowels in the form of nonsense syllables. This seemed to be too abstract for him to retain. Therefore, an attempt was made to be more concrete by using the sounds in words which were meaningful to him. Instead of writing [p] in combination with vowels only, the word '*pipe*' was written. Bobby was given a pipe which he was encouraged to handle. With the pipe in one hand, he traced over the word on the blackboard, first with his finger and then with chalk. As he was tracing the word, he spelled it aloud and followed this with the production of the sounds represented by the letters. After doing this many times, the guide word was erased and he went through the same procedure alone. A game was devised which was used when he experienced difficulty in remembering a sound or a word. The therapist would produce the sound or word silently so that he might use it as a clue. This encouraged the speech-reading on which he is sometimes dependent.

Bobby then advanced to the level of learning to combine sounds with specific basic phonetic units, such as [æt], [æn], [ɪt], and [eɪk] to make meaningful words. In learning words containing, for example, the [p] sound, Bobby also learned to read and write the phonetic units which were present in the word. At the same time he learned the correct production of all of the sound combinations which were represented in the individual word. Recent therapy has emphasized the retention of what has been learned, the addition of new words to his reading and writing vocabulary, and the formation of short sentences based on his present vocabulary. It is believed that this has proved to be a more rapid method than the original procedure of teaching one sound in nonsense syllables might have been. It also seems to have laid a stronger foundation for more advanced therapy. This, of course, may be true only in Bobby's case. Experience indicates, however, that there are some children with aphasic-like symptomatology who respond better to the syllable type therapy. Therapists who are not getting expected results with one type of therapy might well achieve better results with the other approach. A therapist who is working with an aphasic child or with any individual with a speech defect must of necessity be

flexible in approach in order to meet the specific needs of the patient. For a more detailed account of therapeutic procedures, Granich (*6*) may be useful as a reference book. Although its presentation is somewhat confusing and it is written primarily about the techniques applied to the adult aphasic, its suggestions may be modified and used to advantage by a resourceful therapist who is concerned with aphasic children.

Progress

Progress was extremely slow at the beginning. Time was consumed in searching for the best therapeutic approach for Bobby and also in orienting him to this new learning situation. After a relatively short time, however, the tempo of progress began steadily to increase. It was hindered by the time away from the clinic required by Bobby's medical treatments and his Christmas vacation. This interruption was in one way an advantage because it showed that Bobby could retain what he had learned for at least a period of several weeks. He now has corrected all of his letter reversals and substitutions and he can write the letters of the alphabet when they are dictated to him at random. At the present time he has a reading, spelling, and writing vocabulary of approximately 100 words which he can use in sentence form. He also produces all the sounds correctly in those words except [r], [l], and [s] blends and there is some distortion of vowels. He now has the concept of identifying a new word by 'sounding it out.'

After Bobby had been in residence for almost a year, and after five months of therapy, he was re-examined by the clinical psychologist. This examination found the difference between the performance and verbal tests even greater than before, with the pattern of abilities essentially the same. Again greater success was met where the language demands were at a minimum. With a single exception all performances were found to be near life-age level or above. On the non-verbal type test Bobby applied himself well and showed an alert, critical approach. He was not easily discouraged and persisted for a reasonable length of time to solve the problems. On tasks where visuo-motor demands were primary, he gave responses which were essentially normal and a general performance that fell slightly above the average for his age. In contrast he became easily fatigued and bored with tasks in which language demands were primary. The evolving of concepts seemed to be labored and although he remained cooperative, he became increasingly inattentive. It was evident that in addition to the operation of his specific handicaps, avoidance tendencies had developed in relation to verbal material. At the life-age of 11.2 his mental age on the Grace Arthur Performance Test was 12.8 and the IQ was 114. His mental age on the subtests were as follows: Knox Cube, 7.5; Seguin, 9.5; Casuist, 13.5; Manikin and Feature Profile, 15.5; Mare and Foal, 15.5; Healy Picture Completion (II), 10.5; Porteus, 11.5; and the Kohs, 12.5. His MA on the Stanford-Binet was 6-10 and his SA on the Vineland Social Maturity Scale was 9.0. Again his failures were primarily in the items which necessitated written and oral communication.

This psychometric pattern as evidenced in Bobby's case and in other children at the clinic seems to be one of the best test clues in the diagnosis

of aphasia in children. When other etiological possibilities (such as complete deafness, psychological and motivational problems, and severe mental retardation) are ruled out for a child who has not developed speech or language, and the child presents a psychometric pattern of significant discrepancy in the Binet and Performance IQ, then for the purposes of diagnosis and subsequent appropriate treatment the child should be considered as aphasic.

Summary

A case study has been presented to illustrate one type of therapy which may be used in the language and speech training for children with aphasic-like symptomatology. In the absence of standardized tests and accepted criteria for congenital aphasia, the child discussed was tentatively diagnosed as presenting symptoms of alexia and agraphia, as differentiated from severe mental retardation, in addition to a severe hearing impairment and generalized dyslalia. In spite of these multiple handicaps the child has made significant progress since the initiation of the specified therapeutic program.

In the light of experience with this child and others whose psychological tests show a near-normal performance intelligence in contrast with severely limited verbal abilities, a diagnosis of congenital aphasia seems justified, for which the prognosis under appropriate therapy is good.

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Measurement Of The Intelligence And Personality Of The Deaf: A Review Of The Literature

Stanley Berlinsky

FEW SYSTEMATIC studies of the intelligence and personality of the deaf were conducted until two decades ago. Educators have given much thought and time to the educational problems of the deaf and have conducted many experiments in the improvement of teaching methods. It was not, however, until the methods of clinical psychology were developed and employed that somatopsychological problems of the deaf came under scrutiny. During the 1930's, for example, Pintner and his students produced a series of research papers which did much to stimulate scientific interest in the intelligence and personality problems of the deaf.

The present investigation is a review of the pertinent experimental attacks on the measurement of the intelligence and personality of the deaf. For the purposes of this paper, 'deaf' refers to those individuals whose hearing is of no practical value for the purpose of communicating with others. Such individuals may range from totally deaf to those with considerable sound perception, but in all cases their hearing is of little functional use in the ordinary affairs of life. This general group can be divided into two distinct classes based entirely on the time of the loss of hearing: (a) the congenitally deaf, i.e., those who were born deaf; and (b) the adventitiously deaf, those who were born with normal hearing, but in whom the sense of hearing has subsequently been severely impaired through illness or accident.

The writer is aware that a distinction between the deaf and deafened does exist with reference to language acquisition, speech, and possibly sound perception. A review of the literature, however, does not reveal information which differentiates these two categories on the basis of personality structure or reactions to deafness. Inasmuch as authors themselves have not indicated clearly a distinction between the deaf and the deafened, both populations have been included here.

Intelligence of the Deaf

For many years authorities have agreed that a special type of psychological test is required for measuring the intelligence of the deaf. While some comparative ratings may be obtained by administering the traditional intelligence tests used with the hearing, such as various adaptations of the Binet type test or any one of the well-known language type group tests, it is clear that such a test will not provide a fair estimate of the native mental ability of the deaf child. Obviously, individual or group mental tests which

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involve language, either in the instructions or in the test proper, will penalize the deaf subject, and thus result in low intelligence quotients. Accordingly, psychologists familiar with these problems have worked to produce tests which will provide a fair index of the mental capacity of the deaf. In addition to the authors' statements, the writer has checked the instructions to the subjects and the test administration of the majority of the tests included in this review and has verified the fact that the tests used were non-language tests.

The only thorough attempt to apply the Binet tests to the deaf was made by Pintner and Paterson, who published their results in 1915 (*29*). This was the first attempt by these workers to apply a general intelligence test to the deaf. They selected the Binet-Simon Scale, which at that time was relatively new and was giving good results with hearing children. Using the Goddard Revision of the Binet-Simon, the investigators first attempted to apply the test using written language. The questions were typed and presented to the child; and the child answered, if possible, in writing. This method was soon abandoned since it became apparent that many of the children did not understand the written questions, but did understand the questions when asked by means of the manual alphabet or sign language. Therefore, the workers used any method or combination of methods, speech, writing, signs, or manual spelling in order to put the questions across. Still many of the tests were found to be totally unsuited for the deaf. The language of the questions was too difficult. Many of the children could not adjust to the question-and-answer situation. Lack of experience with certain things, such as money or stamps, handicapped the deaf child. Pintner and Paterson concluded this pioneer investigation of the Binet-Simon Scale with the deaf by stating that the Binet Scale as it stood was totally unsuited for the deaf. They suggested, in turn, that performance tests might be more suitable.

After a series of exploratory studies (*30*, *31*, *22*), all of which indicated that whenever language was a factor the progress made by the deaf was much less than that made by comparable hearing children, Pintner and Paterson (*23*) devised the first battery of performance tests arranged especially to measure the mental ability of deaf children. These tests required no knowledge of language and were administered by using natural signs only.

In a summary of this work, Pintner and Paterson (*24*) presented a number of points which they felt were definitely established by their studies. The conclusion most important from the point of view of the present review is:

> In all mental tests that do not involve the functioning of audition, the average deaf child is from two to three years retarded, as compared with the average hearing child of the same age. This retardation of two or three years seems to exist all through the school career of the deaf child. It is not an initial retardation which is later overcome.

The next logical step, an attempt to combine mental with educational achievement so as to evaluate correctly the one in terms of the other, was found in Reamer's study (*34*). She used a completely non-language mental test comprising six separate units. She also made use of an Educational Survey Test, surveying eight separate school subjects in the ordinary school curriculum. Reamer gave tests to 2500 school children. Standardiza-

tion was based on 2172 cases out of the 2500 tested. Ages ranged from eight years to 21 plus. The children represented 15 state institutions and 11 public day schools. A comparison of the schools showed glaring differences in mental caliber and educational attainments. A further comparison of the manually and orally taught children showed that the average mental and educational index of the manually taught is lower. Congenitally deaf children were found to be slightly but not significantly below adventitiously deaf children both in mentality and educational attainments. Reamer found no significant difference between the mental ability and educational attainment of the partially and totally deaf. The conclusion reached in this study stated that the average difference in mental ability between deaf and hearing children was about two years and the discrepancy between the two years of mental retardation and the five years of educational retardation disclosed by the study was due to language handicap. In this respect, Reamer's study supported the results of Pintner and Paterson.

By 1924, Pintner's Non-Language Test had been shown to have about average reliability and validity and had been proved to be well adapted to deaf children. In that same year, under the auspices of the National Research Council, a nationwide survey of schools for the deaf in the United States was begun by Day, Fusfeld and Pintner (7). The Pintner Non-Language Test and the Educational Survey Tests were used as measuring instruments by these investigators. This survey covered 41 schools and reported results for 4432 pupils in the age range from 12 to 21 plus. A very definite attempt was made to test all children between the ages of 12 and 15; and because of the wide geographical distribution of the schools examined, it is probable that these results give a valid picture of the intelligence test scores of the deaf children in the United States in this age range. The investigators found that all tests gave differences between the deaf and the hearing which were large and statistically reliable. The I. Q.'s of the deaf according to this study ranged from 82 to 86 on the tests administered.

Both of these studies raised the question of the relationship between intelligence and age of onset of deafness, and both of them found that for extremely young children the age at which a child has become deaf has no influence upon his score on an intelligence test. Both surveys also divided their cases according to the method of instruction, i.e., whether oral, manual, or combined. Both surveys found that the intelligence of the manually taught pupils is lower. The Reamer study found the combined pupils to be highest, the Day, Fusfeld and Pintner survey found the oral pupils highest.

It is interesting to note that although there was no language required in taking this test, the conclusion was again reached that deaf children, being from two to three years retarded, do much poorer work on the intelligence test than do hearing children.

In 1928, with the publication of the results of a series of performance tests prepared by Drever and Collins (*8*) at the University of Edinburgh, previous conclusions from studies made in the United States concerning the superior intelligence of hearing children over deaf children were questioned. The Drever-Collins Performance Tests were devised primarily for

testing the deaf. They tended to prove that the deaf child, if not the equal of the hearing child, was very little his inferior. The test itself consisted of eight performance tests for which norms were established by giving tests to 200 deaf and 200 hearing children. Instead of confirming the general view held in the American studies that the deaf child is about three years retarded as compared with the normal, this English study showed that, when the language factor is entirely eliminated from tests, it is doubtful whether the deaf child is very much retarded at all.

Out of this conflict of results, MacKane (*17*) undertook a study in 1933 intended to check in the United States the results of the Drever-Collins Scale. He made use of the Pintner-Paterson Performance Scale, the Drever-Collins Performance Scale, and the Arthur Point Scale, in which he made slight modifications in order to give it without verbal directions. He tested 130 deaf children between the ages of 10 and 12 years. Each deaf subject was paired with a hearing subject of the same age, sex, national background, and economic status. On all three of the performance scales the deaf fell below the hearing by about six to seven months. In general, this study indicated a slightly lower intelligence of deaf children as compared with hearing children in regard to concrete intelligence as tested by the standard performance scales. In their original study Drever and Collins found that at no age level were the deaf more than one year inferior to the hearing. MacKane's results supported these findings.

The next group of studies to be undertaken testing the intelligence of the deaf all made use of the Arthur Performance Scale as their measuring instrument. The children in the South Dakota School for the Deaf were tested by means of the Arthur Performance Scale (*35*). The range of the I. Q.'s was from 61 to 157 with a mean I. Q. of 95.2. Seven of the cases tested or six per cent fell below an I. Q. of 70 and were called feebleminded in this report. The average I. Q. in this study is a little higher than that reported by MacKane.

Burchard and Myklebust (*5*) in 1942 used the Arthur Performance Scale with 68 adventitiously deaf children and 120 congenitally deaf children. The mean I. Q. of the adventitiously deaf was found to be 101 and the mean I. Q. for the congenitally deaf was found to be 102. They concluded that the children studied were of average intelligence.

In a study reported by Hood (*12*) in 1949, 401 deaf children between the ages of 8 and 12 attained a mean I. Q. of 99.3 in the Anderson Performance Scale with a scatter greater than that for hearing children. The distribution deviated substantially from the normal with a cluster of low I. Q.'s. The mean I. Q. of the adventitiously deaf children was significantly greater than that of the congenitally deaf. Only 19 per cent of the former fell below 85 as compared with 34 per cent of the latter. The study also indicated that intelligence scores of children born with a 90-100 per cent hearing loss increase with longer attendance at school. Deaf boys were superior to deaf girls in intelligence but inferior in reading. Those children deafened by meningitis showed a higher I. Q. than those deafened from other causes.

Oleron (*20, 21*) reported the findings of two studies in 1949 and 1950

making use of J. C. Raven's Progressive Matriees (*33*). This test has much to commend it, according to Shipley (*6*). Since the content is limited to highly abstract material which is largely foreign both to the classroom and to everyday experience, it is highly probable that what is being measured relates more to native abstract intelligence, and less to educational opportunity, academic achievement, or cultural background than is the case with most tests of general intelligence. The test appears to fill a need for a highly discriminating, nonverbal and culture-free test of general intelligence.

Oleron's 1949 study used this test on 16 classes of deaf mute students ranging from 10 to 20 years of age. The results of the study show these tests to be useful for the determination of the mental level of deaf students. In his 1950 study, Oleron suggested that the deaf are equal to the hearing in concrete mental functioning but that they are deficient in abstract intelligence. He administered Raven's Progressive Matrices, 1938 Edition, to a total of 246 deaf children between the ages of 9 and 21 years and found them to be markedly inferior in abstract intelligence. Results also revealed a slower mental development on the part of the deaf. Subjects who became deaf after they were five or six or over are superior to congenitally deaf and to those who became deaf early.

What Kind of Test Is Needed? The question as to whether deaf children should be tested on a scale standardized for the hearing or on a scale standardized for the deaf alone is a difficult one. It is of vital importance to some educators of the deaf that test scores of deaf children be compared with those of the hearing since the ultimate aim of using oral methods is the preparation of the deaf child to fit adequately into a hearing environment both educationally and socially as soon as possible. There are many, on the other hand, who believe that the important question is not how the deaf child ranks in comparison with hearing children but how he ranks in comparison with other deaf children of his chronological age. Accepting this viewpoint, Amoss (*2*) and Hiskey (*11*) felt that the teachers and administrators of the deaf should have a test standardized on deaf children alone, a test that would give a better understanding of the ability of young deaf children than can be obtained from intelligence tests standardized on hearing children. The Ontario and Nebraska Tests appear to be a step in the direction of more adequate measurements of the deaf. These two tests were constructed especially for the deaf population.

The Ontario School Ability Examination (*2*), designed by Amoss, was published in 1936. It was originally standardized by using performance items with hearing children, adding some tests as the Knox Cube, the Healy-Fernald Puzzle, etc., and administering the battery to both hearing and deaf children. In a further attempt to standardize the test, the children were given the Stanford-Binet. The correlation between this new test and the 1916 revision of the Stanford-Binet was very close. The new test was then standardized on 288 deaf pupils at the Ontario School for the Deaf. The range of I. Q.'s was from 49 to 192 with a median I. Q. of 94. The children ranged in age from 5 to 22.

The Nebraska Test of Learning Aptitude (*11*), designed by Hiskey, was standardized on 466 institutionalized deaf pupils. Eleven behavioral functions are tested in this battery including memory for colored objects, bead stringing, block patterns, completion of drawings, paper folding, puzzle blocks, and pictorial analogies. At the Central Institute for the Deaf (*18*), 61 deaf children and 66 speech defective children with normal hearing were tested on Hiskey's test of learning ability. The above two groups were also given one of two little known tests used at the Institute, namely, the Advanced Performance Scale or the Randall's Island Series for younger children. Comparisons were made between the learning test and the performance scales of intelligence to determine the relationship between the two types of tests. The results indicated that the learning test is a valid test of intelligence and that it measured the same type of ability as did the performance test. This investigation showed the Hiskey test to be a valid measure of mental ability. Learning quotients can be compared with intelligence quotients of the deaf and hearing on performance scales.

Kirk and Perry (*14*) made a comparative study of the Nebraska and the Ontario tests. This comparison was made on 49 children in the Paul Binner Day School for the Deaf at Milwaukee, and 49 hearing children aged 5 to 11 from public schools. The results showed that the Ontario test was consistently higher on both hearing and non-hearing groups. The Ontario results more closely resembled the results of the Binet test. From a practical point of view the Ontario test is superior to the Nebraska Test of Learning Aptitude (if the Binet has any relation to learning ability) because it is quicker to administer, simpler to handle and carry, easy to score and costs less.

The results of the studies of the intelligence of the deaf seem to indicate a slightly lower general intelligence for the deaf as a group when compared with the hearing. The age of onset of deafness seems to make no difference in the intelligence of the child. There appears to be no difference generally between the intelligence of the congenitally and the adventitiously deaf. It was found that the average intelligence of the deaf children taught in day schools is slightly higher than that of children attending the residential schools. The learning tests for the deaf cannot be translated into Intelligence Quotients, but the general results corroborate very well with the findings on the intelligence tests proper. As compared with the normal hearing child, the deaf child is about 10 points below in intelligence on non-language and performance tests. This difference in general intelligence is not great and many of the deaf exceed the average intelligence level of the hearing. Why there should be this difference in intelligence on tests which seem to be equally fair to both the hearing and the deaf is not clear. The most frequent hypothesis advanced is that, in the first place, the congenitally deaf may come from families which on the average are somewhat lower in intelligence than the average family; and, in the second place, the adventitiously deaf, particularly those with neural involvement, may suffer a slight arrest of mental development related to the same disease that caused the deafness.

Personality of the Deaf

It is in the area of personality testing that the psychologist in the field of the deaf suffers the severest limitations of appropriate testing tools. The tests which have been used to date are largely those which have been designed specifically for hearing groups and possess corresponding language and situational complexities which are outside the range of experience and abilities of the average deaf individual. An exception to this point is the Brunschwig Personality Inventory for Deaf Children (*4*) which has very limited application. As a result, little progress can be reported in the analysis of the personality of the deaf through psychological tests. Those attempts to use psychological tests to obtain a better knowledge of the personality of the deaf may be divided into three main areas: (1) those studies concerned with the general adjustment of the deaf, (2) studies measuring the emotional stability of the deaf, and (3) studies of the fears and wishes of the deaf.

Brunschwig began the pioneer studies dealing with the general adjustment of the deaf when she studied a large number of deaf students in 1936. She administered the Rogers Test of Personality Adjustment to 159 deaf pupils and 243 hearing children. The responses for 42 matched pairs were studied in detail. The results of this test were then compared with teachers' ratings of the same children on the Haggerty-Olson-Wickman Behavior Scale. This comparison did not show a close relationship with teachers' ratings, nor a significant difference between the deaf and hearing children. The fact that the Rogers Test failed to differentiate between the deaf and the hearing children prompted Brunschwig to construct her own test.

The Brunschwig Personality Inventory for Deaf Children (*4*) was standardized on 183 pupils in a residential school for the deaf and 346 normal children of approximately comparable socio-economic status, race, and national origin in a public day school. The average age of the deaf children was 16 and the average age of the hearing children was 13. This test, developed by the experimenter, consists of 67 items and yields scores on general adjustment, social adjustment, and home adjustment.

From the above subjects, 80 pairs of boys with impaired hearing and normal hearing were matched on the basis of age, intelligence and race. A new group of 171 boys and 150 girls with impaired hearing were selected from 6 residential schools and compared with the normal standardization group. Using the Personality Inventory for the Deaf, Brunschwig found that the general adjustment score of the children with impaired hearing was significantly lower than that of the normal hearing children. On the sub-scales, the discrepancy was greatest in social adjustment. In the main, differences were insignificant on the school and home adjustment scales. For all practical purposes this study indicated that the deaf school children feel almost as well adjusted as the hearing school children so far as this inventory was able to measure such adjustment.

In a further study using her Personality Inventory, Brunschwig administered the test to 183 children in a residential school for the deaf with onset of hearing loss between zero and 10 years of age and to a group

of 857 children from six residential schools. The results of this study indicated that for various sex and geographical groups age at onset of deafness and ability to adjust are not correlated. In contrast, boys from the larger group who lost their hearing before age one made significantly better scores than those who lost their hearing at age four or later.

Pintner and Brunschwig (*25*) then raised the question as to whether deaf children taught by different methods of instruction showed differences in adjustment score. In a comparison of the type of instruction the child received (i.e., manual, oral, or a combination) and his adjustment, these two investigators found that the manually taught pupils scored the lowest with no difference evident between those instructed in the oral and combined methods. Inasmuch as the children least promising in the eyes of the teacher and those most difficult to handle are relegated to the manual classes, the authors believed that the difference is due to the selection of pupils for the manual classes and has nothing to do with the effects of instruction upon adjustment. These authors also looked for a relationship between the adjustment score and the amount of deafness in the family. The results obtained pointed to the fact that children from families where there are no other deaf members obtain the lowest adjustment score, while children from homes where there are other deaf people, particularly adults, have higher average adjustment scores. The authors suggested that

> . . . it may be that the deaf child in a deaf home is better understood during his preschool life. He is not handicapped by the absolute misunderstanding or by the misdirected sympathy which may be the lot of the deaf child in a home made up entirely of hearing individuals.

Two other investigators have also reported on the general adjustment of the deaf, using the Haggerty-Olson-Wickman Behavior Rating Scale as their measuring instrument. In 1938, Springer (*36*) evaluated the general adjustment of children using this Rating Scale. Equating for chronological age, intelligence, and social status, he found that there were more behavior problems among deaf children than is usual among the hearing. Deaf children supposedly have more temper outbursts, are more apt to steal, are more wide awake, and are more active mentally. Kirk (*13*) used the same scale in 1938 and found that the deaf were markedly inferior to the hearing. He does not, however, consider this scale to be suitable for deaf children. Educators of the deaf feel that most teachers of the deaf rate their pupils more severely than do teachers of the hearing, as represented by published test norms.

Pintner (*27*) in 1940 used another general adjustment test, namely, the Pupils Portraits Test on deaf children from 11 to 14 years of age. The results showed that most deaf children indicate in tests of this type that they *feel* as well adjusted as the normal hearing child.

Both recently and in years past, there have been a great many psychoneurotic inventories constructed for testing the emotional stability of normal hearing individuals. Many of these same instruments have been used to test the emotional stability of the deaf.

Because there had been some evidence that the deaf manifest more

neurotic tendencies than do the hearing, several studies were conducted to determine the validity of this assumption. Springer (*36*) in 1938 and Springer and Roslow (*37*), also in 1938, made extensive comparisons of deaf and hearing children when they administered the Brown Personality Inventory for Children. Springer in the initial study compared 397 children in day and residential schools for the deaf with 327 children with normal hearing. The results of this study indicated that the deaf children rated significantly more neurotic than the normal children. (Critical ratio= 10.3). Both groups scored considerably 'more neurotic' than the standardization group. The mean score for the deaf indicated that about 50 per cent of the deaf are as neurotic as the most neurotic 10 per cent of the hearing individuals. In the second study using the same measuring instrument, Springer and Roslow tested 59 pairs of children with impaired and normal hearing selected from the above study. The investigators matched these children on the basis of age, sex, intelligence, socio-economic status, and nationality. The results of this study indicate that the group with impaired hearing rated significantly 'more neurotic' than the normal group (Critical ratio=5.6). This further substantiated the fact that according to this study the deaf group were more markedly emotionally unstable than a hearing control group.

The Thurstone Personality Schedule was used as a testing instrument by Lyon (*16*). The test was administered to 87 high school boys and girls at the Illinois School for the Deaf. The questionnaires were presented in the presence of a psychologist to groups of 15-20 pupils by an interpreter who was familiar with the instructions. Lyon concluded that 17 per cent of the group measured would be classified as being 'in need of psychiatric advice' and 13 per cent as 'emotionally maladjusted.' When the results of this study were compared with those of a study made at the University of Chicago in 1929 with freshman students, the percentage of deaf pupils classified in the above two groups was found to be more than twice that of college freshmen of approximately the same age.

Pintner, Eisenson, and Stanton (*27*) summarized the above studies of neurotic tendency by saying that the attempts

> . . . to apply to deaf . . . psychoneurotic inventories constructed for the hearing make the deaf appear emotionally unbalanced. To those who know the deaf the results seem to be grossly exaggerated. We must be extremely cautious in accepting at their face value, the results of inventories constructed for hearing children when applied to the deaf.

A different type of study of emotional stability was undertaken by Pintner, Fusfeld, and Brunschwig (*28*) who used the Bernreuter Personality Inventory to test deaf adults. These three research workers reworded the inventory in order that it might be comprehensible to a more inclusive population of deaf adults. This revised form was administered to 27 normal hearing college students who had answered the test in its original form several weeks previously. In comparing the results of the original form with those of the revised form there was no indication that the validity of the items had been perceptibly affected by the slight revision. Another revision of the inventory was then made for use with the deaf. This second revised form

was then administered to 50 deaf college students. When compared with the norms supplied by Bernreuter for the hearing population, the deaf scored as emotionally more unstable, more introverted, and less dominant than the hearing. The deaf college students and deaf adult men rated as less self-sufficient and the deaf adult women as more self-sufficient than corresponding hearing groups. Among the deaf adults, less amounts of neurotic tendency and introversion, more self-sufficiency and dominance were found to be associated with the occurrence of deafness in later childhood rather than at birth or infancy. The percentage of cases experiencing difficulty in making friends with the hearing was only slightly larger for the group communicating with the hearing by writing than by speech. The authors concluded that those sensory handicapped individuals studied reached almost the same levels of adjustment in daily life as were on the average attained by fully normal hearing individuals. The data indicated that those who became deaf later in life and, therefore, acquired speech and language more readily, were in general more like the hearing in their personality. Consequently, the authors reasoned that speech helps the deaf behave more like the hearing in their personality adjustment.

In 1938, Gregory (*10*) conducted a study to compare the responses of deaf and hearing children in institutions as to certain personality and interest traits. Her test group was composed of 128 children from the School for the Deaf at Faribault, Minnesota, and 156 children from the school for dependent children at Owatonna, Minnesota. The two groups were paired on the basis of sex and age. All of the children were intellectually retarded and under institutional care; they ranged in age from 13 to 18 years. Data obtained through the use of the Minnesota Interest Blank, the Rogers Test of Personality Adjustment, and the Woodworth-Cady Test of Emotional Stability were used as the basis for her conclusions. The most characteristic difference found between the two groups was the tendency on the part of the deaf to withdraw from social participation and responsibilities. This was shown in their desire to be younger and more dependent and to isolate themselves from social pastimes. The fact that the deaf had a greater desire for more friends and were unable to get on well with their teachers suggested to the author of this study that they had made an insecure social adjustment. The less adequate emotional adjustment exhibited by the deaf also indicated their less satisfactory adaptation to adolescence.

In a further study of the attempt to measure the emotional stability of the deaf, McCormick (*19*) tested the responses on the Aspects of Personality Test of 110 children in an elementary day school for the deaf. These responses were compared with a standardization group of normal hearing children. The conclusion reached in this study stated that deaf children were markedly less stable emotionally, differed little in introversion-extroversion, and tended to respond in a somewhat more dominant manner than the normal hearing children.

Kline (*15*) conducted a study intended to compare the responses of deaf children in a free association test with those of normal hearing children

and adults. The stimulus word was given in written form, and the subjects reacted by writing their responses. Fifty stimulus words were used. The age range of the subjects was from 11 to 17 years inclusive. The results show that on the whole the age trends of the deaf and hard of hearing are in agreement. Out of the 11 categories used, eight showed the same trend. The disagreements were in co-ordination, similarity, and whole-part responses.

One of the latest studies of the emotional stability of the deaf was conducted by Altable (*1*) who obtained Rorschach responses from 45 deaf mute children through the use of 'Mimic Language' with an experimental teacher as interpreter. Structural analysis of the tests revealed outstanding characteristics of the group: color and shading shock, feelings of inferiority and sexual complexes, lack of plan and order, absence of precision with rigidity of thinking, lack of intellectual control over the affective impulses, and coarctation. The total picture, as evolved from this study, resembled that of neurotic groups.

The fears and wishes of deaf children were made the subject of investigations by Pintner and Brunschwig (*26*). Using a check list of 39 items that referred to fears and a list of seven pairs of wishes, they procured some statistically reliable data. The difference in the number of fears reported by the deaf and hearing boys was insignificant, whereas the difference between the girls was large enough to be important. (There was a sex difference as to the number of fears present in both the hearing and deaf groups.) The fears that were checked by over 50 per cent of the hearing are exactly the same as those most frequently marked by those who were deaf. These fears turned out to be: war, death, bad men, robbers, snakes, and fires. The deaf girls added lightning, mice, thunder and hospitals to the list. An interesting point was that thunder was more often checked by the deaf children than by the hearing. The authors suppose that the slight increase in fearfulness among the deaf may be attributed to the added insecurity that occurs in situations which cannot be adequately understood by children with impaired hearing. The test lists, unfortunately however, omit 'important anxieties' that emerge from life conditions of these persons.

The seven pairs of wishes in this study forced the child to make a choice between immediate and deferred gratification. A statistically reliable difference lay in the direction of a stronger preference for immediate gratification of the desires of the deaf. Such a preference for immediate reward is usually taken to indicate a lack of maturity.

In a study conducted by Brunschwig (*4*), 171 boys and 150 girls with impaired hearing were selected from six residential schools for the deaf and compared with 340 children with normal hearing on an item of the Brunschwig Personality Inventory for Deaf Children referring to fear of the dark. The results of the study showed that boys and girls with impaired hearing more frequently reported that they were afraid in the dark than their respective control groups (40 per cent vs. 20 per cent for boys; 70 per cent vs. 40 per cent for girls).

Various studies of the personality of those persons who are deaf seem to lead to the conclusion that the deaf

person has reached about the same over-all level of adjustment as has the normal hearing person. True, there are differences in the scores of general adjustment of these two groups; but these differences appear slight to the investigators of the personality of the deaf, especially when it is taken into account that the tests devised for the hearing person may not be valid for the deaf. Whenever the research worker has modified the language of the personality test to bring it within the comprehension of the deaf child, the differences between the deaf and the hearing appear to be very small. Some of the findings that do seem to be consistent throughout a number of studies are that the deaf find it just a little more difficult to adjust to their environment. The tests reveal they are somewhat more introverted and a little less dominant than the normal hearing person; they are probably a little more emotionally unstable, i.e., more neurotic; they are slightly more egocentric; they have somewhat more feelings of depression and suspicion; and they are a little less mature in judgment and social competence than the normal hearing person. Deaf children were also found to tend to have more fears than children with normal hearing. Data regarding wishes suggest that the desire to hear and speak better is directly expressed less frequently than desires for other satisfactions. There is some evidence, however, that on unconscious levels, the desire to communicate effectively is strong and assumes the character of an autonomous need. Adjustment scores of the deaf have not been found to be correlated with degree or duration of hearing loss, with age at onset, or chronological age. Good adjustment tends to be associated with intelligence and with the presence of other deaf members in the family.

It may be observed from these studies that deafness per se does not cause a certain type of personality, but there is a tendency to accentuate certain features which might otherwise remain within normal limits. As studies develop investigators will probably be able to obtain a better understanding of deafness and be better able to guide the education of the deaf.

Discussion

Throughout the history of testing the intelligence of the deaf runs the thread of the argument about what kind of intelligence test is needed. Should it be a test which will rate him on the same scale as his normal hearing equal or one which will evaluate his position in the deaf population to which he belongs? It seems that there is a need for both of these tests; one to be used when the deaf individual is functionally a member of the deaf population and the other to be used when he finds himself ready to or forced to mingle in the normal hearing population. The question of whether the same test can be used for both situations becomes the rather academic one of the possibility of measuring native or inherent intelligence.

If a measurement is made of the native intelligence of the deaf, it appears that the basic question being asked is: If nothing else is changed about the deaf except to restore hearing, would they then be equal in intelligence to the normal hearing individual? All other things being equal, do the deaf have as much native intelligence as a normal hearing person?

If this is true then the whole problem of intelligence testing with the deaf is to measure the native intelligence of the deaf as adequately as has been done for the hearing. In the case of the deaf person, since the language factor is handicapped, this would mean that a true non-verbal test is needed. The results of this survey indicate that there may be two reasons that make it appear that the deaf are not equal in intelligence to the normal hearing population.

The first reason is that even in the manipulation of non-verbal elements there is a possibility that sub-vocal speech is taking place to some extent. This idea of sub-vocal speech might be presented as a theory as to why the deaf are not able to function on the non-language tests as well as the hearing person. The non-language test is not then actually as much of a non-language test as it is intended to be. In this type of test overt language is not called for but a certain type of language is. At least an easy or wide command of the language would still be a help if this theory is correct. Even if this sub-vocal speech theory is not correct, normal hearing persons find it easier to exchange information with their fellow human beings in that they are able to assimilate more knowledge even though the basic knowledge or intelligence of the deaf and normal hearing person is the same. This is evidenced in the interchange of reactions, discussions, and a freer state among the hearing in which information may be obtained with less effort.

The second reason is that deafness is correlated with the intelligence of the home. The National Health Survey (*3*) indicates a much higher incidence of deafness among persons of lower income groups than among higher income brackets. This is probably due to better medical care which the higher income groups are able to afford and to the fact that those with impaired hearing find it harder to compete economically with normal hearing persons. There is also evidence that the intelligence of this bracket is lower than that of the higher income groups. Eells (*9*), in his study of social-status factors in intelligence test items, found that on typical group tests children from working class homes do less well than children from middle class homes. If we were to take a stratified sample on a socio-economic dimension and match this with a normal hearing sample, we might find a great deal of the apparent difference in intelligence would be accounted for.

In evaluating the results of the studies of the personality of the deaf there is every reason to suppose that people who were not able to hear would develop different personality traits than those of the normal hearing individual in that they live in an entirely different environment. There needs to be a critical evaluation of the tests and studies that indicate that these people have adjusted relatively well to themselves and to their environment. In the opinion of this author, there is reason to suppose that the environment itself is sufficiently different that these people should differ in personality. Basically, hearing is necessary for a normal existence; and a lack or complete loss of it would be expected to cause some disturbance in the person's adjustment. A large percentage of people who are able to hear fail to make a satisfactory adjustment, and life must be much more of a problem to someone

who has lost or never had the faculty of hearing. It appears that this person who has lost the means of communication with the outside world would have every likelihood of developing quirks of personality.

The deaf person is able to communicate under limited conditions in that he is able to read lips, if he is looking at the person who is speaking. In the normal course of existence, however, there are a number of danger signals which are auditory in nature and to which the deaf person is not able to respond. In the case of humorous situations which arise because of some audible pattern, everyone in the group may be laughing at something that the deaf person is unable to comprehend due to his hearing deficiency. In the isolation of deafness there is a tendency for the imagination to work overtime. Seeing his friends or family laughing or talking without knowing what is being said has in many cases given rise in a person to a feeling of, 'They're talking about me.' The next step may be to imagine, 'They're plotting against me.' This type of brooding and suspicion may lead and has lead to persecution complexes. The isolation of the deaf person, the aggravation of head noises, and the lack of participation in conversation, all have a dangerous mental effect on any but the most stable and psychologically strong persons. In situations where this person is called upon to cross streets and to participate in everyday activities, the simple noises of automobile horns, noises of adults and children at work and at play, the simple ring of a telephone indicating a call from a friend, business associate, or a danger sign indicating fire nearby, the droning of the radio to which hearing individuals are conditioned, are completely lost to the deaf person. This position of 'not belonging' may also lead in time to a fear of people and a fear of new situations. It is a small wonder that several investigators have postulated that a deaf person tends to live in an atmosphere of despondency and suspicion. Ramsdell (*32*) in his work with military personnel who had acquired their deafness feels that

> . . . deafness accentuates the tendency of the suspicion in the person and may make an over sensitive person unduly suspicious of hostility in those around him. A person secure in his own emotional life will develop no paranoid trends even when deafened but the tendency toward paranoid reactions exists to some degree in nearly all of us, but is generally kept under control . . . deafness seems to be a powerful stimulus to any latent paranoid trends in the personality.

Basically, the problem in studying the personality of the deaf is to uncover how this deaf person is able to make a normal adjustment in his life and compete with the normal hearing person in an environment in which he is virtually an outsider. A large proportion of the studies to date have given information which appears to be contrary to actual observation of the deaf. If these studies are correct in their assumption that the deaf person has reached about the same level of adjustment as has the normal hearing person, except for slight differences, then this investigator feels that it is important to study the methods being used with the deaf at the present time. If these people are able to adjust so well without the faculty of hearing, then many investigators would, no doubt, be interested in the methods employed with the deaf in an effort to incorporate these methods

into their own therapy with normal hearing individuals.

The psychological studies of the intelligence and personality of the deaf indicate that the two factors of intelligence and personality are not entirely independent and that good adjustment on the part of the individual tends to be associated with intelligence. Whatever may be said of the strength or weaknesses of the measuring instruments used to describe the intelligence and personality of the deaf, these instruments do contribute effectively in broadening knowledge of the deaf person's capacities. While very few investigators are apparently satisfied with the present tools of measurement, it appears that the judicious use of those available offers promise of perfecting and refining them as investigators discover their shortcomings through future research.

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Speech Disorders Among European Military Personnel In World War I: Part 2.

Harlan Bloomer

Hide Shohara

ARTICLES ON speech disorders arising from warfare, published in German, French, Italian and British medical journals or other scientific publications issued within the period 1914 through 1920, are summarized in the two parts of the present article. Part 1 (*4*) was devoted to aphonia and dysphonia; Part 2 deals with mutism and deaf mutism, stuttering, and aphasia and dysarthria.

Deaf-Mutism and Mutism

Incidence. Few statistics were found on the occurence of these disorders in the years 1915-1921. Max Seige (*50*) found that 7.2 per cent of all the hysterical cases entering his speech station in Germany over a period of seven months were afflicted with hysterical deaf-mutism. Of these, 63 per cent showed normal otological findings. There were twice as many cases of deaf-mutism as there were cases suffering from paralysis of the limbs. Eleven and one-half per cent of all hysterical cases had speech disorders and the disorders of speech were four times as numerous as disturbances of vision. Seige also noted that the percentage of all the neuroses showing deaf-mutism was 4.2, which is larger than the proportion found during periods of peace. Myers (*38*) noted that the order of frequency of speech defects in civil life (aphonia, dysarthria, mutism) was exactly reversed in war. This observation is supported by Hurst's findings.

Smurthwaite's statistics for the English army (*51*) are not directly comparable to Seige's, since his 260 cases include all speech disorders, not simply hysterical cases. About 92 per cent of his cases were aphonic, only 5 per cent mutes, the remainder stutterers.

From Germany it was reported that 99 per cent of all cases of psychogenic deaf-mutism resulted from shock after explosion (*44*), and that functional impairment of the hearing apparatus resulted in 75 per cent of those soldiers exposed to explosion (*56*).

According to Mott (*36*), mutism was not due to mental disturbance resulting from shell shock. He noted

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that whereas one in 20 suffering from shell shock with no visible signs of injury lost his speech, these same men were quite able, on admission, to write a lucid account of their experiences.

Etiology. Nearly all writers mentioned explosion and shock resulting from explosions (sometimes the patient was partly buried by dirt and debris) as a cause of mutism or deaf-mutism. Hurst (*26*) and Scholz (*49*) mentioned other injuries connected with shock. Wyroubow (*55*) had in mind explosions when he mentioned contusion as a cause of mutism. Smurthwaite (*51*) included reference to laryngitis due to breathing gas. Contributing causes listed were 'temporary physical weakness due to insufficient nutrition and overexhaustion' [Seige (*50*)], and exhaustion in subjects with poor resistence owing to inherent or acquired defect [Mott (*36*)]. Myers (*38*), Hurst (*26*) and Nadoleczny (*40*) stressed noise, horror and terror, fear, anxiety and displeasure as pathogenic influences.

Myers (*38*) believed mutism to be a part of an inhibitory process which isolates the individual from the outside world in order to protect him from further shock. Similarly, Buscaino and Coppolo [quoted by Gloria (*16*)] believed that many of the symptoms observed owed their origin to a severe psychic shock caused by violent explosion. In many cases emotional elements exerted a predominant influence, if not an exclusive one. They also took into account the subjective preliminary condition of the soldier, noting that the difference in individual reactions to the same emotional influence depends on the predisposition of the individual. Some organisms easily adapt themselves to unforeseen shocks, even severe ones; others show a special tendency to react deeply and actively to the emotions. Some authors found other predisposing conditions such as a lifelong history of nervous headaches, migraine, dizziness, irritability and fear [Hirschfeld (*24*)] and nervous tension [Sollier and Chartier (*52*)]. About one-third of Myers' cases (*38*) had a predisposing condition of nervousness, stuttering, wounds or exposure. Sollier and Chartier enumerated nearly all of the above causes. Over one-third of Seige's cases (*50*) of hysterical deaf-mutism showed hysterical symptoms in the pre-war period; about 6 per cent had a rather low mentality; 18 per cent had ear diseases, including slight catarrh of the middle ear; only one had had speech disturbance (stuttering in childhood).

Smurthwaite (*51*) believed mutism to be purely psychic:

> The mind and feelings act on bodily functions causing different functional troubles; mental and physical overexertion prepares the patient for fear or anxiety producing shock resulting in an emotional neurosis in the form of aphonia, mutism, etc.

Even in cases of shock induced by laryngeal spasm due to irritation of noxious gas, the loss of voice persisted in psychogenic cases until some stimulation (mental or otherwise) removed it. Mott (*36*) suggested that mutism was due to an

> ... inhibitory, functional paralysis of the voluntary nervous centers which control the management of the breath and its escape through the glottis, mouth and nostrils. For I have seen many cases where they have involuntarily and unconsciously in their dreams talked and uttered cries and swore.

Many patients incorrectly attributed their mutism to catching cold [Nadoleczny (*40*)].

Symptomatology. Wyroubow (*55*) described in detail the symptomatology of mutism and related speech afflictions resulting from explosions. Alterations of speech and voice were said to be characteristic in the psychoses or psychoneuroses due to contusion. Usually associated with injury to the auditory apparatus; hearing loss might vary in duration, amelioration of the hearing loss occuring before or at the same time as reappearance of speech. He distinguished three fundamental groups: (1) mutism, (2) whispered speech, and (3) falsetto voice.

1. Mutism—complete silence. The patient tries to produce movements for sounds, but no speech comes forth. In three cases of complete mutism, weakness of tongue movements was noted. Contrary to deafness which always begins immediately after the contusion, mutism can develop at different times. Most often, however, the appearance of mutism coincided with the appearance of deafness. It was not unusual for the deaf person to talk in a loud voice at first without hearing his own voice or that of anyone else. It was only after some time that he ceased to speak or produce sounds. Mutism was observed to last for several consecutive weeks (four to eight). After recovery the patient might explain his loss of speech by saying that his tongue did not permit him to speak and that there was something wrong with his larynx.

2. Whispered speech. This is the most common form of mutism. It might appear with the onset of deafness or some time later. It sometimes represented a stage of transition from complete mutism, the patient exhibiting more effort and movement than is needed for ordinary whispering. The rate of whispered speech was diminished and rhythm was irregular, with interruptions and retardations developing sometimes into a pronounced stuttering. Whispered speech might be used for several weeks. Restoration of voice was slow, and the voice remained weak for a long time, retaining traces of irregularity of rhythm.

3. Falsetto voice. This might coincide with the onset of deafness or might appear after a short period of mutism, and might persist several weeks. The falsetto consisted in speaking with a weak voice or a voice of rather high pitch. The rate of speech was accelerated, the rhythm always irregular and broken. In other cases there was dysarticulation of words resembling sometimes a true stutter. The speech movements were exaggerated, the tongue contracted convulsively, the lips, face and neck muscles were tense, the rhythm of breathing was upset, strained inspiration was followed by convulsive expiration; in general speech lost its affective quality. Restoration to normal speech was gradual, and bore a definite relationship to restoration of hearing. There was frequently a diminished reflex of the uvula and pillars of the fauces, and pectoral vibrations were also diminished. Restoration to normal speech was gradual, and bore a definite relationship to restoration of hearing.

Mott (*36*), as noted above, stated that loss of speech occurred in five per cent of patients suffering from shell shock with no visible signs of injury. As a rule the patients were unable to whisper or produce any audible sound even when they laughed, and were unable to cough. In severe cases they had difficulty in protruding the tongue and in swallowing. They understood all that was said to them unless deaf. Internal language was not affected and they could write. The sudden and varied manner in which

these mutes recovered their power of articulate speech and phonation was ascribed by Mott to a refractory condition of the voluntary cortical mechanism of phonation.

Less severe cases might be able to cough, whistle and blow out a candle, but could not whisper or talk. Less severe cases usually recovered more quickly than serious ones. Mott referred to Bastian who noted that there might be more or less complete anaesthesia of the pharynx in hysterical mutism.

Loss of consciousness following an explosion [Sollier and Chartier (*52*), Myers (*38*), W. Scholz (*49*) and Gloria (*16*)] and amnesia on recovering consciousness [Hurst (*25*), Myers (*38*)] were common symptoms of deaf-mutism from shell shock. Myers (*38*), Pflug (*44*), Putelli (*46*), and De Sandro (7) observed pharyngeal anaesthesia or anaesthesia of the tympanic membrane. Among the motor disturbances characteristic of these two afflictions were paralysis of the vocal folds [Hurst (*25*), Pflug (*44*), De Sandro (7), and Sollier and Chartier (*52*)]. Muck (*37*) found that paralysis left the larynx 'in the position of adductor paralysis,' although Scholz (*49*) found the larynx intact and the vocal folds moving freely in cases of mutism. Myers (*38*) stated that although complete paralysis of the articulatory parts is rare in mutism, their movements are usually clumsy and restricted. De Sandro (7) and Scholz (*49*) referred to convulsions as a concomitant of mutism.

Sollier and Chartier (*52*) reported profound respiratory difficulties of mutes (short, shallow breath, inability to sigh or yawn, short and aphonic cough and suppressed l a u g h t e r). Hurst (*25*) noted that the patient might not be able to expire with enough force to whistle or blow out a candle. According to Pflug (*44*) o n e characteristic of deaf-mutism was defective breathing. Myers (*38*) mentioned tremors, Pflug (*44*) incoordinated movements, and De Sandro (7) observed contractures and various vasomotor and secretory disturbances although normal vegetative movements of the throat and mouth were preserved. Smurthwaite (*51*) noted that difficulty in breathing brought on intense emotional reactions and that choking sensations caused loss of voice. He also stated that gassed patients complained of tightness in the throat, a condition having its advent at the time of gassing. Inflammation of the vocal folds was noted by Nadoleczny (*40*) in 40 per cent of his cases of mutism, but he believed that this had no bearing on the speech disorder.

Therapy. The therapy for mutism was oftentimes the same as that used in the treatment of aphonia and dysphonia. Various methods of treatment were discussed by Nadoleczny (*40*), Gloria (*16*), and Sollier and Chartier (*52*). A large number of cases as reported by Smurthwaite (*51*), Artwinski (*2*), Wyroubow (*55*), Hurst (*26*) and others recovered spontaneously with rest as the only treatment. The most frequently employed therapy, if we may judge from the published reports, was faradization. This was first used by Kaufmann [see Barth (*3*)] who accompanied it by suggestion and active exercises initiated by sharp military commands. Urbantschitsch (*54*) claimed to be the first to use a technique of 'overwhelming' the patient ('Ueberrumpelung') in connection with faradization. Faradic current (oftentimes strong enough to cause pain) was applied to the speech organs or the re-

gion of the ears. He maintained that the sudden shock-like stimulus combined with a lively, painful sensation 'overwhelmed the psyche' and prevented any interference with the innervations of speech movements. Zange (*56*) used faradization only in severe cases of sudden deaf-mutism. Scholz, (*49*) used an 'electric' treatment three weeks in one instance of mutism with the result that the patient recovered speech but stuttered. Kaess (*28*), who used suggestion, did not succeed in speeding up the cure by the use of faradization. Pflug (*44*) found faradization ineffectual unless accompanied by Kaufmann's other recommendations. Hirschfeld (*24*) cured the majority of his patients of mutism by faradization and suggestion. Smurthwaite (*51*) did not recommend faradization. Artwinski (*2*) used faradization in the region of the ears and accompanied the electrical treatment by suggestion.

Suggestion was used in other ways than in connection with faradization. Myers (*39*) obtained some success by the use of suggestion under hypnosis in the treatment of cases of mutism caused by shock. His procedure was to convince the patient of previous successes by the suggestion method. The patient imitated the doctor's vocal movement, then coughed to get a sound. He then produced consonants and finally proceeded to syllables and words. Muck (*37*) was made famous by his ball-method, referred to in the section on aphonia (*4*), which consisted in suddenly inserting a metal ball, 1 cm. in diameter, into the larynx and pushing it against the rear commissure. On hearing his own voice the patient was convinced that he could produce voice and started phonation. Kaess (*28*) accompanied suggestion by repeated compression of the larynx from both sides for brief periods. The patient was instructed at the same time to breathe, phonating as violently as possible. After vowels were successfully pronounced, he went on to syllables and sentences. Hurst (*26*) believed that 'after the patient is convinced that he will recover, it is immaterial what form of treatment is used so long as it is accompanied by vigorous persuasion.' O'Malley (*41*) asked the patient to phonate with a laryngeal mirror placed in position. If the vocal folds did not approximate, rubbing of the pharynx and fauces usually stimulated secretion and reflex adduction of the folds with a cough. This method also appears to have involved suggestion.

Wyroubow (*55*) observed that the reappearance of speech often followed diverse modes. In some cases the patient began to speak in ordinary voice, albeit somewhat feebly. Sometimes speech reappeared under the influence of a strong emotion. It returned also when the patient was persuaded to pronounce monosyllables after the doctor. In other cases it reappeared first as whispered speech and gradually became stronger. It began sometimes by utterance of inarticulate sounds in addressing others. Often the strained movements of mouth and breathing muscles served as a prelude to restoration of speech. Hurst (*26*) succeeded in restoring speech most often by direct suggestion or some sudden emotion which broke down inhibition so that the patient cried out from pain or excitement or in nightmare. Participation in choral singing was sometimes effective. Dub (*8*) cured cases of deaf-mutism as follows: Deafness was treated first. He informed the patient in writing that his hearing would be

restored first, and then his speech. The patient was then taken into a dark room and his eyes were tightly bound. Then the light was turned on. Two ear catheters were inserted through the nostrils toward the eustachian tubes, and the mild faradic current was applied. Hearing often returned in the first treatment; if not, more current was applied allowing one-minute intervals between applications.

Hurst (*26*) found hypnosis successful only in resistant cases. Stansfield [see Mott (*36*)] placed little faith in hypnosis or auto-suggestion, especially in the early stages of treatment. Myers (*39*) recommended hypnosis when suggestion was not successful.

Anaesthesia was employed in many cases. Putelli (*46*) believed that narcosis was a valuable method of cure, holding that even in cases where a cure was not effected, it had a diagnostic value. Penhallow (*43*) reported that one English soldier, afflicted with deaf-mutism, began to speak loudly when narcosis by ether began. He recovered entirely. De Sandro (7) reported that etherization often brought quick and complete cure, and he believed that the irritation of the mucous membrane by the ether contributed to the cure. Massei (*34*) reported several cures by etherization, but also several failures. Moriondo (*35*) was pessimistic about the effectiveness of narcosis as a curative measure.

Seige (*50*) recommended as treatment for deaf-mutism prolonged breathing, bed rest, and abstinence from smoking and alcohol. To these Stansfield (*cited, 36*) added sleep, easily assimilated diet, stimulation of appetite and attention to excretions. Zange (*56*) recommended complete isolation of the patient without any psychological stimulus that would remind him of the frightful events. Marx (*33*) regulated breathing by systematic exercises, making a transition from breathing to whispering, then to speaking, which must begin violently and explosively, during the expiratory phase. Light pressure might be put on the larynx at the beginning of phonation.

Pflug (*44*) described in detail his methods of treatment. In severe cases hospitalization was necessary, and a distinction was made between newly-arisen cases and older illnesses. In the newer cases rest was the chief treatment. After two or three days the patient was able to speak and hear for the most part if simultaneous psychic treatment was given. In cases of failure recourse was made to systematic breathing exercises. In long-standing cases leave was denied and confidence inspired by demonstrating cured cases to the patient. This was done in the first few days, then breathing exercises were begun, and the patients were induced to phonate, perhaps by the aid of coughing. Faradic currents applied to the surface in the vicinity of the larynx always failed; intralaryngeal currents usually gave better results.

Lombard and Baldenweck [quoted by Gloria (*16*)] proposed a method for treatment of hystero-traumatic mutism, consisting in suppression of auditory control of voice. The method was based on the principle that whenever the ears are deafened there is observed in the patient normally a rise in the pitch of the voice, probably as the result of the sudden loss of the auditory control over the intensity of the sound uttered in normal phonation. The authors effected cures in three cases of hystero-traumatic mutism not accompanied by bilateral deafness. The authors obtained the effect by means of a telephone re-

ceiver in which the current was interrupted by a simple sound interrupter. It was possible to obtain the same result by causing a current of water to pass into the two auditory canals or by blowing air with a rubber tube inserted into the canals. The subject was instructed to watch the lips of the doctor and count from one to ten. The patient would immediately begin to move his lips, pronouncing the words slowly with a dysphonic voice. By continuing the deafening process and thereafter by gradually carrying the apparatus further away when the voice seemed to be normal, the patient heard his own voice and was freed of all disturbance. The three cases cited by the author were cured. This method was said also to be effective for the detection of simulated deafness.

Concerning prophylaxis of deaf-mutism, the authors found in the literature very little beyond what is implied in the results of treatment mentioned above. The point of view expressed in the following statement by Dr. Stansfield (*cited, 36*), however, is of interest.

> I believe that a great deal could be done toward reducing the number of these cases and the severity of the attack of those which do occur, if commanders in the field could be induced to impress upon their men the importance and necessity of taking rest and sleep whenever possible; rest in the horizontal position being of great value by reducing the blood-pressure and thus relieving tension even if absolute sleep is not obtainable.

Prognosis. Reports of prognosis vary greatly. In general most physicians found that treatment by suggestion gave successful results. Some failed to cure by faradization or by anaesthesia, while others reported success. Breathing exercises were used successfully in some cases in preliminary training in control of breath. Even when employing the same methods some therapists secured cures quickly, others after long treatment or not at all.

Stuttering

Incidence. References to stuttering in the literature of speech and voice disorders in soldiers are not found as frequently as might be supposed. This problem was oftentimes discussed in connection with mutism, aphonia or aphasia, since it often occurred as a sequela of these disorders. Although the number of men with these symptoms was probably large, it is possible that it was not considered to be a seriously handicapping disorder.

Hirschfeld (*24*) stated that its occurrence was frequent and that its symptoms ranged from complete mutism to light spastic stuttering as a result of psychogenic disturbances following shell explosion. Mott (*36*) stated that stammering, stuttering and verbal repetition were among the most common disorders of speech along with mutism and aphonia. Smurthwaite (*51*) found only 10 cases out of 260 patients suffering functional disorders of speech and voice. Helmcke, Panconcelli-Calzia and Weygandt (*23*) reported five cases of stuttering acquired during the war and five cases in which stuttering had been present before the war.

Etiology and Pathogenesis. Froeschels (*14*) treated large numbers of stutterers in the Military Hospital No. 4 in Vienna. He described three types of cases: (1) old cases grown worse, (2) cases with no injury to the central nervous system, and (3) cases of stuttering resulting from skull wounds. Of the first group, 11 patients reported that stuttering followed shell explosion. These cases revealed no internal injuries. One case was reported in which stuttering developed slowly

from physical and mental hardships. This patient was cured by the use of cold water baths, bromides and speech training. Prideaux (*45*) described two types of stammering in war psychoneuroses: the first, a true hysterical type (Freud's 'conversion hysteria') and the second, a psychasthenic type in which the dread of stammering perpetuated the disorder. The latter condition was said to occur in relationship to words and incidents associated with past emotional experiences (Freud's 'anxiety hysteria'). As evidence that this was a psychoneurotic disorder, Prideaux mentioned that stutterers do not stutter in their sleep, while standing on their heads, or singing or whispering. He noted that they stuttered less or not at all when talking to inferiors or when reading aloud to themselves.

Gutzmann (*19*) attributed the origin of stuttering to emotional conditions, but said it usually occurred in soldiers who had shown an earlier predisposition or stuttered before the war. Five cases which he treated had been 'cured' when they were children or young men and developed stuttering again as a result of emotional shock. He ascribed stuttering to psychogenic factors even in the case of wounded men. Harms (*21*) also described stuttering as a speech disturbance due to psychic injuries.

Liébault (*30*) was of the opinion that stuttering, aphonia and mutism were all forms of anarthria or dysarthria and hence represented a motor difficulty. As such, stuttering might occur immediately after shock. Godfrey (*17*) believed that stammering resulted from incoordination between the articulatory and respiratory muscles. He noted the existence of neurotic history and temperaments of nervous excitability. In certain patients, neurasthenic conditions (persistent muscular tremor, insomnia, functional paralyses, etc.) may have been present previously, but had disappeared leaving only the stuttering.

Symptomatology. Stuttering was often mentioned as a symptom secondary to some other disorder such as mutism or aphonia. Smurthwaite (*51*), and Hurst (*26*, 27) referred to stuttering as a stage in the recovery from mutism. Gloria (*16*) described dysarthria and stammering in a case recovering from mutism. The patient in this instance said he had always stuttered. Rayneau and Boutet (*47*) described a case of stuttering secondary to deaf mutism. The stuttering disappeared after a few days of reeducation. Scholz (*49*), and Hurst and Gill (27) mentioned a tendency toward stammering in patients recovering from aphonia. According to the latter authors, the stammering could be overcome within a few minutes by persuasion and reeducation. Froeschels (*11*) stated that no two cases of stuttering are alike. In an earlier article he referred to a case of a soldier who showed clonic stuttering and then tonic stuttering after faradization during recovery from aphonia. Froeschels regarded this development from clonic to tonic stuttering as proof of his own theories regarding the development of stuttering.[1]

As mentioned in the section on etiology, some authors regarded stuttering as a motor disability. Liébault (*30*) found that all stutterers showed

[1]Froeschels (*14*) stated that in his belief all stutterers passed through three stages of development: (1) simple repetition of syllables and sounds, (2) a stage of exercise or exaggerated movements of the speech organs, and (3) a stage dominated by spasticity, tonic cramps, and conspicuous attendant movements of the other parts of the body.

bad breathing mechanics and that those who recovered normal speech rapidly had nearly normal vital capacity and respiratory function. He referred to the opinion of Chavigny that the symptoms of war stuttering were more exaggerated than symptoms of true stuttering; stuttering might also occur subsequent to mutism.

MacMahon (*31*) stated that shellshock stammering was not like ordinary stammering. In shellshock there was a severe inhibition of speech usually accompanied by amnesia. The total picture was suggestive of aphemia.

Froeschels mentioned that a diagnostic sign differentiating aphonia from stuttering was that the patient with hysterical aphonia could not use will power to speak whereas the stutterer could. Wyroubow (*55*) described stuttering as associated with falsetto voice and said that the rate of speech was accelerated, rhythm irregular and breathing disrupted.

Davidenkoff (*6*), in an interesting article, described a 'dysarthria pselliforme' caused by shell explosion. He regarded this disorder as a form of traumatic dysarthria. The patients showed a tendency to repeat initial syllables twice. The symptoms of this disorder were considered to be distinguishable from ordinary stuttering in that there were no breathing anomalies and no blockages. It differed from hysterical disorders in that it underwent a gradual regression. The author compared it to aphasic stuttering, and noted that in the examination of patients suffering from this disorder, one might find disbalance of the two cerebral hemispheres. The left hemisphere was most often affected, resulting in a slight paralysis of the right face and tongue. He thus regarded 'dysarthria pselliforme' as an organic sign of functional deficiency of the cortical language centers.

Treatment. The treatment most frequently prescribed for stuttering consisted of breathing and speech exercises, psychotherapy, electrical stimulation or some combination of psychotherapy and speech drills. Rothe (*48*) advised that war stutterers be treated by philosophical study, especially the study of Stoic philosophy which distracts the attention of the patient from himself as a sufferer and induces him to conquer pain, embarrassment, anger, et cetera through self-control and the knowledge of human nature as disclosed by will and reason. From the standpoint of a Stoic, stuttering is a test imposed by fate to show that the individual can control himself.

MacMahon (*31*) believed that therapy was not necessary in mild cases. For the more severe cases he recommended breathing exercises, vowel drills emphasizing resonance, and consonant drills in which the voiced consonants were produced slowly and voiceless consonants were produced quickly with immediate initiation of the vowel sound. Mental strain should be avoided and the training should be undertaken gradually. Relaxation of the throat and tongue muscles was considered to be helpful.

In 1919 Froeschels (*11*) recommended the use of long continued exercises which have a beneficial effect. Hypnosis was also considered to be helpful, but electrotherapy was regarded as useless for stuttering. Froeschels described breathing and voice exercises, and advised suggestive therapy for certain types of cases (especially developmental stuttering) and the use of nonsense syllables. The therapist should explain to the pa-

tient that no real difference exists between nonsense syllables and connected speech. Breathing and phonation exercises modified from Gutzmann were also considered to be useful. Only in certain cases was strong faradic current recommended.

Marx (*33*) cured seven out of nine stutterers by regulation of breathing, electrical treatment and systematic exercises. Stein (*53*) reviewed the methods of Klenke, Gutzmann, Liepmann, Aronsohn and Froeschels. He was not completely satisfied with any of the methods advised by these therapists, and he devised a therapy in which he asked the patient to speak or read syllables, making a pause of equal length between each two syllables. The length of the pauses was gradually reduced until a normal rate of speech resulted. With each pause, the speech organs were supposed to assume the rest position.

Prideaux (*45*) was of the opinion that a cure could be attained through suggestion. He stated that if the physical therapies were successful, it was because of their suggestive effects. In his opinion, one must discover the underlying psychic cause of stuttering. This was usually to be found in the past emotional experiences which gave rise to mental conflict and repression. The first moment of stammering was regarded as of diagnostic importance. One should investigate the surrounding circumstances and get the patient to talk about them. Stuttering was then to be removed by persuasion or suggestion. Following this should come a short period of mental analysis and explanation which was necessary to establish a complete cure. The physician should explain to the patient why he stutters, reassure him of the ultimate removal of stuttering and tell him that stuttering is, after all, merely an expression of a condition of the mind, like weeping, in which he is not conscious of the cause.

Prognosis. There is scanty reference to prognosis except insofar as it is implicit in the reports of cure or failure under treatment. The most complete discussion of this subject was found in an article by Alexander (*1*) who stated that traumatic stuttering of mild and easy grades showed favorable prognosis with 26.4 per cent cure. The rest improved. Treatment was not successful among 14.8 per cent of the severe cases of high grade traumatic stuttering. This percentage represented 5.5 per cent of the total number of traumatic stutterers. Post-typhoid stutterers presented a favorable prognosis if treated long enough. Long standing developmental stuttering of severe types was considered to present an unfavorable prognosis.

Aphasia and Dysarthria

Incidence. Aphasia, dysarthria and amnesia formed a relatively small percentage of the total war casualties involving disturbances of speech and voice. The incidence could not be clearly determined but the number of cases evidently was not inconsiderable. Goldstein (*18*) examined about two thousand cases of skull and brain injuries due to gunshot wounds. Although not all of these men are stated to have shown aphasic symptoms, it is to be inferred that a significant number were aphasic. By 1918 Froeschels (*10*, *11*, *12*, *13*) and his associates had treated over 1000 cases of speech disturbance due to head injuries or mental troubles. Some of these were aphasic and dysarthric. Foix (*9*) reported 100 cases seen in the treatment center under Pierre Marie. Marie and Foix (*32*) stated that

speech defects of traumatic origin occurred with remarkable frequency, corresponding to the frequency of cranial wounds. Helmcke, Panconcelli-Calzia and Weygandt (*23*) reported the existence of six cases of aphasia in a group of 78 men under treatment in their clinic. Oppenheim (*42*) presented data on 215 cases suffering head wounds. The findings of Henry Head (*22*) are too well known and too easily accessible to justify discussion here.

From the foregoing few references, however, it is apparent that the problem of brain injury in relation to speech was considered an important one during World War I. The discussion of aphasia and dysarthria are combined because the symptoms are usually described together in the articles surveyed. According to Gutzmann (*19*) every case of aphasia showed some dysarthria symptoms.

Etiology. Aphasia in military personnel was usually ascribed to brain injury associated with cranial wounds due to projectiles, but some authors mentioned aphasic cases believed to be due to other causes. Marie and Foix (*32*) ascribed the majority of aphasias to the effect of cranial wounds, but stated that not infrequently they could be due to a fall on the head or to the effects of a distant explosion. They grouped speech defects resulting from head injuries into three categories: (1) aphasic and anarthric syndromes consecutive to lesions of the left brain, caused by projectiles of war; (2) other speech difficulties observed in the case of patients suffering head injuries (blows on the head, etc.); and (3) difficulties of speech traumatic in origin, but without wound. The last group was said to show different clinical pathology and symptoms from the others, but these differing symptoms were not clearly described.

Claude (*5*) claimed to have found two cases of motor aphasia among 142 cases suffering indirect shock without actual external wound. Léri (*29*) reported cases of shock without direct injury which resulted in pure motor aphasia with anarthria and almost complete agraphia. There was no deafness or blindness. Clearness of mind was relatively well preserved, but memory for past events, abstract ideas, calculation, and other intellectual functions were altered.

Symptomatology. The characteristics of this affliction varied considerably from patient to patient, so that generalizations must be made with caution.

Froment (*15*) stated that traumatic aphasias were always accompanied by loss of intellectual function, and that this was true also in cases of transitory traumatic aphasia, even though the language difficulties were no longer apparent. He mentioned 12 such cases resulting from lesions in the left parietal region.

Goldstein (*18*) found that speech disturbances due to war injury did not differ in principle from those observed in disease except that spontaneous recovery occured more frequently in the former, and that not all forms of aphasia seen in disease cases were found in traumatic injuries; for example, pure word deafness was never observed. Disturbances of hearing were frequent in injury cases. He further stated that motor aphasias were most frequently encountered, while sensory aphasias were rare. Amnesic aphasia (either transient or permanent) was often seen; transcortical motor aphasia was often observed to result from lesions of the frontal lobe. Liepmann described a

man who could sing, but could not pronounce words except when aided by rhythm and melody, or by automatized cue.

Marie and Foix (*32*) treated aphasia and anarthria as closely related subjects, in which anarthria was due to lesions in the inferior third of the ascending frontal convolution and a small adjacent area of the posterior extremity of the second and third frontal convolutions. The lesions resulted in three types of anarthria: one showing complete or almost complete improvement (corresponding to the more anterior lesions), another showing marked residue of dysarthria, often with some very slight aphasic symptoms (corresponding to the more posterior lesions), and a third showing slowness and scanning speech with slowing of ideation (corresponding to the higher lesions, and analagous to that which one observes in the profound anterior frontal lesions). The aphasic symptoms were also associated with regional lesions of the cortex in the temporal region, supramarginal gyrus, angular gyrus, and marginal or superficial lesions of the speech center.

Oppenheim (*42*) described the occurence of aphasia, dysarthria, mutism and aphonia in association with amnesia and retrograde amnesia. In retrograde amnesia, loss of language elements occurred in the following order: proper names, substantives, adjectives, verbs, exclamations and gestures. Retrograde amnesia was improved either by 'treatment' or by reeducation. In the recovery of language he observed that the cases conformed to 'the law of Ribot' in that the return of memory followed the inverse order of the loss. Amnesia was said to be associated with dysarthria, mutism and aphonia and with diverse varieties of aphasia as a result of cranial lesions in the region of the language centers. Hallez (*20*) noted the rather rare occurrence of paralysis of the facial nerve (VII) accompanied by symptoms of slow rate of speech, disturbance of lingual and labial sounds, and difficulty in chewing.

Treatment. Goldstein (18) urged that the treatment be adjusted to the nature of the case as revealed by psychological tests, including tachistoscopic examination. If the substratum of the brain for certain functions had not been completely destroyed, the patient might be able to learn to do things as before. If it had been destroyed, the patient would have to build up compensatory performances. Goldstein stressed the need for individualized training and education adjusted to the needs and abilities of the patient. He presented the details of therapy for several cases.

Systematic articulation drills were recommended by Goldstein (*18*) [see also Froeschels (*12*)]. The therapist was advised to use them as exercises, making certain that training was also provided in connected speech, since 'we do not speak combinations of syllables; we speak words.' Particular attention was paid to the fact that the learning of certain sounds facilitated the learning of others. Frequent repetition was considered to be very important. Recommendations for the improvement of reading and writing disabilities were also presented.

Froment (*15*) stated that systematic reeducation stressing auditory stimulation, if undertaken in time, was beneficial in cases of limited cranial lesions. Froeschels (*12*) recommended the use of miniature toys (objects of household use, animals, dolls, etc.) in instructing aphasic patients. Paretic

muscles were to be treated by Swedish massage, faradic current and exercises. Language and speech training were highly recommended by Helmcke, Panconcelli-Calzia and Weygandt (*23*). They reported the successful use of reading of single sounds, then one-syllable words, followed later by longer groupings. One patient was directed to assemble printed letters according to dictation.

Oppenheim (*42*) recommended re-education of a type employed for mentally retarded children and that this should be supplemented by the use of nerve tonics, physiotherapy and psychotherapy.

Prognosis. The prognosis was variable. Froment (*15*) stated that traumatic aphasia frequently had a good prognosis, sometimes recovering rapidly, although one could not expect complete recovery. Some slight hesitancy, language faults, et cetera remained accentuated by emotion or illness. The prognosis should be determined on the basis of extrinsic elements, and not on the basis of the site, extent, or depth of the lesion; difficulties of language comprehension were thought to have a more unfavorable prognosis than motor aphasias; the therapist should rely more upon the patient's demonstration of ability to learn new words, rather than upon the number of words conserved after injury. He recommended study of the diverse intellectual functions of the traumatic aphasic. Marie and Foix (*32*) described anarthric syndromes which were remarkable for their tragic beginning and their successful transformation. After a period of absolute speechlessness, the recovery sometimes became complete, and sometimes left only a slight residue of dysarthria. The strictly aphasic syndromes had a more unfavorable prognosis than the anarthric; the period of absence of speech was usually followed by a long period of aphasic difficulties with general diminution of intelligence; profound lesions of the areas intermediary to those whose destruction caused anarthria and aphasia gave rise to total aphasia, profound and relatively incurable.

Summary

A review has been given of information derived from a survey of European scientific periodicals dealing with speech and voice disorders of soldiers in the first World War. The subjects of aphonia and dysphonia, mutism and deaf-mutism, stuttering, and aphasia and dysarthria are discussed under the sub-topics of incidence, etiology and pathogenesis, symptomatology, treatment and prognosis. An attempt has been made to present without critical comment or evaluation the facts and theories as interpreted from the original sources. A brief description of some of the major speech rehabilitation centers of the European Continent is included. The survey is confined almost entirely to publications issued between the years 1914-1920. Articles dealing with military personnel of the United States are not included.

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Book Reviews

(Editor's note: Beginning with this issue, the scope of *Book Reviews* has been broadened so that it may better serve our readers with information about new publications which are directly or indirectly related to speech and hearing. This section will continue to print evaluative reviews of the more directly related books; but as a new service, there will be added in each issue a list of all current publications in which readers might be interested. The aim is to make *Current Publications* as up to date and complete as possible in order to provide a reliable cumulative bibliography in this field.

Where our readers' interests may be served better by presenting brief abstracts or annotations of new books or pamphlets, such abstracts will be given in place of the extended evaluative review. In this way information will be made available about a greater number of publications than heretofore.)

IRWIN, JOHN V. AND DUFFY, JOHN K. *Speech and Hearing Hurdles: A Practical Guide and Handbook for Classroom Teachers and Parents.* Columbus, Ohio: School and College Service, 1951. Pp. 95. $1.20.

The sub-title of this booklet states its purpose and should indicate its limitations for those who might be misled by the publisher's blurb stating that 'undoubtedly it will serve as a brief text for many training classes in colleges and universities.' The authors make no such claim and obviously did not write with any such intent. As a guide to classroom teachers and parents the book has much to commend it. It is simply and clearly written. It can be understood and appreciated by the layman; and the reading is made very easy by use of the double column and explanatory subheads.

Areas covered are *Language Development of the Child, Children with Delayed Speech, Articulatory Problems of Children, Stuttering Problems of Children, Children with Defective Hearing, Voice Problems of Childhood, Cerebral Palsied Children,* and *Children with Cleft Palate.* It will be seen that the major 'speech and hearing hurdles' are considered, but this reviewer feels that too much valuable space is devoted to a discusison of cerebral palsy. The book does not devote enough space to speech and hearing problems which are more common to parents and classroom teachers.

The authors have made an important contribution with their chapter, *Children with Defective Hearing.* They have explained problems of hearing so that they can be understood by the layman, and the great number of practical suggestions will be easy to apply. The section on hearing aids is especially helpful.

The chapter on stuttering is also well done, but this reviewer was disappointed that a list of positive suggestions for the handling (not treatment) of stutterers in the secondary stage was not presented as it was for primary stutterers. Three useful appendices are included: *Discovering the Hearing Defective Child, A Hearing Program for School and Community,* and *Specimen Audiograms.* One wonders why the authors emphasized hearing to the exclusion of such matters as a *Speech Program for School and Community.*

In recommending the book to parents or teachers it may be well for the speech correctionist to repeat warnings that the authors perhaps do not emphasize enough: that the information in this handbook is not adequate to allow the parent or teacher to attempt to treat all kinds of disorders. For example, in the chapter on delayed speech the authors suggest that if the child's speech is interrupted because of illness during the age of eight to eighteen months, 'it may be necessary for his parents to pick up at this stage and begin his speech training at the level at which it was interrupted.' This reviewer has never found a parent who was capable of doing this job without some training and the help of a specialist.

It seems well to point out, however, that the objections raised here are minor and that the book would be valuable if used with a full understanding of its limitations.

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Book Reviews is edited by Kenneth Scott Wood, University of Oregon.

HARMS, ERNEST (Editor). *The Handbook of Child Guidance*. New York: Child Care Publications, 1950. Pp. 751. $6.00.

One of the difficulties in the relatively immature field of child guidance has been the problem of gathering information from scattered articles and publications and somehow reducing them to practical application. Ernest Harms, with all humility for the scope of his task, has attempted to furnish some relief from this difficulty. The aim of this volume, as stated by the editor in his preface, is 'to outline the broad fundamental problems which the science of child guidance must encompass.'

The book is divided into eight parts: Part I, *The Development of Child Guidance in the U. S.;* Part II, *Guidance of the Normal Child;* Part III, *Guidance of the Physically Handicapped Child;* Part IV, *Guidance of the Problem and Sub-normal Child;* Part V, *Training for Child Guidance;* Part VI, *Social Aspects of Child Guidance;* Part VII, *Religious Aspects of Child Guidance;* and Part VIII, *Special Viewpoints for Guidance*.

The approach used has advantages to offer. The choice of chapter contributors is, in general, good. It presents an adequate survey of background material and, as a general source book, should be a worthwhile addition to the library of those who work in the field or are preparing for such work. The section on religious aspects, in presenting the approach of the Roman Catholic Church, the Protestant Churches, the Jewish Community, and the Society of Friends, may be not only of theoretical value, but also useful material for personnel working in child guidance, especially when the worker attempts to deal with the problems of the child or parents whose early training included one of the religious approaches described. Taken with the social aspects, the material may permit a more complete understanding of the child as he views his world.

Probably the primary weakness of this book rests in the final section on theoretical viewpoints. In our opinion, any broad survey, as outlined by the statement of aim, should either present a more complete coverage or exclude the theoretical approaches entirely. While it is true that the theories of Freud, Adler and Jung are important, it is also true, for example, that the Rankian theory is conspicuous in its absence. The thinking and practice of Frederick H. Allen are not described. Play therapy, as nondirectively utilized by Axline, or more directively applied by Levy in his theory of release therapy, receives only cursory treatment in the book.

As a general source book covering the present status of child guidance, this edited volume has advantages. If the reader is searching for theoretical explanation or a complete presentation of therapeutic approaches, he may find the book lacking.

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KANNER, LEO. *In Defense of Mothers*. Springfield, Ill.: Charles C. Thomas, 1950. Pp. 167. $3.00.

This 'folksy,' comforting, non-academic little volume prepared especially for tense, jittery, upper-class mothers may seem at first glance too full of simple homespun truths and cracker barrel philosophy. But the professional standing of Dr. Kanner (Director of the Children's Psychiatric Service at Johns Hopkins University) causes one to read soberly his plea for 'common sense,' for dignity in parenthood, for some kind of encystment from the strident advice of psychologists, psychiatrists, radio, television and billboard advertising. His lines are punchy and epigrammatic; his stories of children he has known are interesting; the caricatures which liberally sprinkle the pages are arresting.

Dr. Kanner's thesis is: 'There is no raid shelter from the verbal bombs that rain on contemporary parents. The weird words and phrases confuse and scare them . . . oedipus complex, inferiority complex, maternal rejection, sibling rivalry, conditioned reflex, schizoid personality, repression, regression, aggression. . . Let us close the door to the din which issues from the pseudo-psychological markets.'

He reminds us that true democracy and respect for others begins in the nursery. He reassures that there is no danger in highly stimulating stories and motion pictures if the child is essentially adjusted. He warns against: 'smother love,' overly planning a child's environment, encouraging and abetting hypochrondia, labeling a child, and worrying over thumbsucking.

A particularly well written chapter is *Their Daily Bread*, in which the author discusses anorexia and points out that food-

taking has become a psychological tool in the eternal struggle between children and parents. 'Eating is not a major issue unless and until a major issue is made of eating.' No fresh point of view is presented in his discussion of sex education.

There are very few references to studies in the fields of psychology, psychiatry, pediatrics or dietetics (except for Clara Davis's studies of food preferences in children). There are no footnotes or bibliography. In fact, one is constantly reminded of a well written series of articles for the Sunday supplement. This book would be of assistance to the speech or hearing correctionist as a volume to put in the hands of an over-wrought, neurotic mother.

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KIRK, SAMUEL A. AND JOHNSON, G. ORVILLE. *Educating the Retarded Child.* New York: Houghton Mifflin Co., 1951. Pp. 434. $3.00.

Increased attention to special education for handicapped children has emphasized the need for information on educational methods for the retarded. This book answers many questions about curriculum construction and about methods for teaching children with low intelligence.

The first part of the text discusses the classification, etiology, and diagnosis of mental retardation. After defining the conventional categories, the chapters present a unified classification designed for educational purposes rather than for clinical diagnosis.

The second section gives a history of special education from the time of Jean Marc Itard to the present and includes a listing of principles to be followed in organizing special classes for mentally retarded children.

Programs for the special classes at various levels are discussed in Part Three; Part Four is concerned with special teaching procedures in reading, spelling, writing, arithmetic, and the practical arts. The value of improving speech and developing language is implied in the general discussion, although speech training receives only brief direct mention.

As a general introduction to the field of special education for the mentally handicapped, this book would be a good supplement to the library of the speech therapist. One of its most useful features is an annotated bibliography of more than 40 pages listing books and articles, most of them published within the past 10 years, that deal with the characteristics of the mentally retarded and with the philosophy and principles of special education for the mentally handicapped.

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PORTEUS, STANLEY D. *The Porteus Maze Test and Intelligence.* Palo Alto: Pacific Books, 1950. Pp. 194. $4.00.

Those concerned with the problem of assessing the intelligence of the language handicapped will ignore the implications of this little volume to their own serious detriment. In spite of the fact that he never directly addresses himself to this thorny task, Dr. Porteus has written a book rich in ideas upon which workers with the hard of hearing and the linguistically deficient, with a little ingenuity and research, can readily capitalize. In addition, all professional people interested in intelligence and its measurement will find here a charm of writing, a cogency and tough-mindedness of argument, and a practicality closely related to theory that are most desirable and engaging.

It has been Porteus's intent to review the studies of the validity of his Maze Test, devised in 1914 and widely used ever since. Along the way he has much of importance to say about the diagnosis of mental defect, delinquency, organic brain damage, and racial differences in intelligence.

He begins by attacking the difficult problem of defining intelligence. According to Porteus, the most useful definition (and consequently the most useful and relevant guide to intelligence test construction) must be a functional one that takes into account the individual's ability to take care of himself in a social context, his capacity for social adaptability. This capacity implies (a) the ability to assimilate and put to use his social inheritance, and (b) the ability to make original contributions to that inheritance. In both instances, *planning* is a necessary function. Defining intelligence, then, as the capacity for making planned responses to an increasing range of relevant stimuli, Porteus claims that his Maze Test most effectively taps this characteristic of planfulness or foresight. In support of his claim, Porteus argues from four major

sources of evidence; intercorrelations of the Maze Test with other tests, studies with the feebleminded, studies with delinquents, and studies with lobotomized patients.

In a number of investigations, the Maze Test has shown consistent correlations with the Binet (1916 version) of the order of .50. More importantly, it relates significantly to a wide variety of instruments for assessing intellectual performance of many types. For example, *r*'s are reported of .41 with the Gates Spelling Test, .68 with the Kohs Block Designs, .24 with the Thorndike-McCall Reading Test, .35 with a Rational Learning Test, and .57 with Spearman's *g*. These and other similar correlations, all positive and significant, are explained on the ground that since all are tests of intelligence in some sense, they have in common a factor of planning capacity. The Maze is heavily saturated with this foresight factor and therefore yields the relationships obtained. Further, since the Maze requires no special or mechanical abilities other than that required to guide a pencil between lines, it is uncomplicated by performance factors developing as a result of cultural opportunity.

This idea is further adumbrated through results derived from applying the Maze to mental defectives, delinquents, and lobotomy cases. In all three groups, one of the paramount reasons for their characteristic inadequacy of social adjustment (lack of intelligence in Porteus's definition) is impulsiveness or an incapacity to make planned, foresightful responses. In terms of the thesis of this book, one would predict that they would do poorly on the Maze. The prediction is borne out in a number of careful studies, many of which were conducted by Porteus himself and by his associates. He points out in detail the fact that the Binet is often inadequate in the diagnosis of mental defect owing to the penalty it attaches to linguistic deficiency which can result from environmental barrenness, the failure of the Binet (and presumably similar tests) to show differences between delinquents and non-delinquents, and the tendency for tests well saturated with language items to hold up in the face of cerebral damage. Such failures are taken as demonstrations of the inadequacy of tests which rely heavily on information, verbal comprehension, and cultural familiarity with performance items to tap intelligence as Porteus functionally defines it.

Before pointing out some problems in this briefly summarized position, it is worth stating explicity that those concerned with speech and hearing handicaps are often confronted with the necessity for assessing intellectual ability in just these functional terms. Further, they are frequently forced to make their assessments in situations where the Binet and similar tests are simply not applicable owing to the type of handicap dealt with. It seems quite possible that the Maze might prove highly useful if adequate norms were established and validated against such functional criteria as educability and social competence.

This type of normative research seems to be the most glaring gap in Porteus's otherwise rather convincing chain of evidence. His arguments rest on work with highly deviant groups and not on studies covering the whole range of intelligence in individuals who are not feebleminded, lobotomized or delinquent. Until such investigations are carried out, a healthy skepticism still seems to be called for on the ground that the deviant groups may have something in common that is not important when one works with relatively 'normal' subjects. There is also a need for a test of the notion that the Maze taps planfulness or foresight as a psychological function. When the test can be shown to predict usefully a behaviorally defined non-test criterion of the capacity to make planned responses, it can be much more comfortably accepted. It is quite possible again that the commonality in Maze performance among Porteus's deviants is attributable to something other than foresight as a trait.

But these are tasks still to be done. Meanwhile, Professor Porteus has pointed out a most promising road.

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BROWD, VICTOR L. *The New Way to Better Hearing Through Hearing Reeducation.* New York: Crown Publishers, Inc., 1951. Pp. 226. $3.00.

The author claims the development of a system of auditory training which differs appreciably from other methods. He claims that his hearing reeducation system 'is an improvement over other systems, and its most important and effective features are original and not to be found in other pro-

grams for improving the hearing. The advances are so radical, advantages and benefits so great that it outmodes and replaces current hearing programs wherever it is used.' Previous methods, he feels, relegate the reeducation aspects to a minor role, and do not consider the possibility of improving hearing without a hearing aid. 'The effect of the hearing aid approach is to exclude and offer no assistance to probably half of all hard of hearing persons, patients whose type or degree of hearing loss, occupation or temperament make it inadvisable for them to wear a hearing aid.'

Browd's book presents his hearing reeducation system in a clear and straightforward manner. He develops in detail the principles and methods fundamental to it and includes a considerable amount of lesson material.

The basic principles of the Browd system are: (1) Functional hearing deteriorates beyond any physical inability to hear resulting from damage. Every hard of hearing person has a hidden hearing power and systematic hearing reeducation can free this power and convert it into useful hearing. (2) The hard of hearing person has become conditioned to hear poorly in certain situations. Hearing reeducation for those specific situations must be given before he can hope to hear in them. (3) The hard of hearing person must be reeducated to distinguish sounds.

The author presents a hearing disability questionnaire which covers such specific situations or areas of performance as person to person conversation, telephone conversation, confidential conversation, motion pictures, etc. If an individual suffers any degree of difficulty in any of these areas, a course of hearing reeducation is indicated. Directions and rules are given for the patient and for the assistant who has been selected (with the help of further directions) to lead the lessons. The assistant (professional or nonprofessional, it matters little) is provided with adequate samples of lesson material for a complete home course. The author assures the patient that he can be restored to relative excellence of hearing performance if he follows the directions of the assistant who is to give a private 10-minute lesson five days per week for a period of a few weeks or, at most, a few months. In addition, the author provides complete instructions for the patient to follow during the course of the day. There are special modifications of and additions to the reeducation program which, according to Dr. Browd, make it suitable for all sorts of special cases such as the patient with only a mild hearing disability, the severely deafened patient, the elderly patient, the child, and the person with normal hearing who has one poor ear.

The reader may be skeptical of a book which claims that within its pages are sufficient instructions and materials for an untrained assistant to effect the hearing reeducation of any of such a wide variety of patients, and that, if necessary, the patient may regain the use of his hearing without leaving his home. He may be even more skeptical of a system which purports to rehabilitate the hard of hearing and at the same time ignores the areas of speech reading and speech insurance, and which states that tinnitus, sensations of itching in the ear canals, and a feeling of fullness or pressure will disappear in almost every case as hearing improved through hearing reeducation.

KENNETH O. JOHNSON.
Veterans Administration Hospital
San Francisco

LIGHTFOOT, GEORGIA F. *Personality Characteristics of Bright and Dull Children.* Teachers Coll. Contrib. to Educ., No. 969. New York: Bureau of Publications, Columbia University, 1951. Pp. 136. $2.35.

This is a study of 104 children from the public schools of New York City to determine if personality differences exist between bright and dull children. The author concludes that there are some statistically significant differences, and explains the nature of these.

WATSON, ROBERT I. *The Clinical Method in Psychology.* New York: Harper and Brothers, 1951. Pp. 779. $5.00.

The author designed this book primarily as an advanced undergraduate or graduate text. A short introduction deals with *The Clinical Method*, the second part with *Diagnostic Appraisal*, and the third part with *Psychotherapy*. By intention of the author hardly any case history material is included in the book because he is 'convinced that the best way for the clinician to understand the practice of clinical psychology is to work with his own cases rather than imitate others after a perusal of case reports.'

Over 400 pages are devoted to diagnosis and the use of various tests of personality and intelligence, and 200 pages are given to methods in psychotherapy.

AYER, ALFRED J. *Language, Truth and Logic.* New York: Dover Publications, Inc., 1950. Pp. 160. $3.00.

This book rejects metaphysics and presents some of the issues of the empiricist approach to knowledge in which the author holds that the only significant truths are those which can be verified by experience. Eight chapters are entitled: The Elimination of Metaphysics, The Function of Philosophy, The Nature of Philosophical Analysis, The A Priori, Truth and Probability, Critique of Ethics and Theology, The Self and the Common World, and Solutions of Outstanding Philosophical Disputes.

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Abstracts

BINDER, L. AND THOMPSON, J. Speech guidance in the elementary school. *West. Speech*, 15(4), 1951, 46-48.

The classroom teacher should know something about speech to help the child in early school years. She should also understand talking readiness, the normal speech development of children, and the bases of good speech practice in the classroom. (*C.G.W.*)

FORTUNE, G. J. A community welfare agency and a university cooperating in a speech and hearing program. *Amer. J. publ. Hlth Nation's Hlth*, 41, 1951, 1390-1394.

The organization of the Cleveland Hearing and Speech Center as a Community Fund agency affiliated with Western Reserve University is described. This combined program, dedicated to service, teaching, public education, and research, was initiated in June, 1945. Cooperative programs were set up with university hospitals and professional schools with teamwork clinics. The Center is affiliated with 101 other Community Fund agencies and this liaison allows for student internships and field work not otherwise available. As a result of such combined efforts, it was found that efficiency was increased with less cost to the community or university. (*G.M.P.*)

MONCUR, J. P. Environmental factors differentiating stuttering children from non-stuttering children. *Speech Monogr.*, 28, 1951, 312-325.

The purpose of this investigation was 'to determine whether or not there are any differentiating factors in selected aspects of the environments of stuttering and non-stuttering children which might be of etiological significance in maladjustment in general and in stuttering specifically.' Forty-eight stutterers and an equal number of non-stutterers matched according to age, sex, school placement and residential area were studied. A questionnaire consisting of 330 items was prepared to cover the symptomatology of maladjustment, discipline, eating habits and training, sleep habits and training, toilet and sex training, parental frictions, sibling rivalry, excessively high standards, illness in the family, presence of extra adults in the home, the broken home, speech development and environment, and the basic needs of the child. Only the mothers of the children were interviewed.

The author concludes that 'the stutterers, as a group, were subjected to more adverse environmental influences than were the non-stutterers, and that they were noticeably disturbed by these factors in that they displayed more symptoms of general maladjustment other than stuttering itself than did the children in the non-stuttering group.' (*D.C.S.*)

SHEEHAN, J. The modification of stuttering through non-reinforcement. *J. abnorm. soc. Psychol.*, 46, 1951, 51-63.

Stuttering was considered as learned behavior reinforced by relief from anticipatory anxiety upon completion of the stuttering. The experimental variable consisted of a non-reinforcement situation in which the subject repeated the stuttered word until read without stuttering, before proceeding with the reading of the experimental passage. Subjects under the experimental condition showed a significant reduction in stuttering. Stuttering was held to be subject to the same laws of behavior as other adjustive processes. (*C.R.E.*)

Abstracts is edited by Eugene T. McDonald, Pennsylvania State College, assisted by the following committee: Asa J. Berlin, Pennsylvania State College; Leo G. Doerfler, University of Pittsburgh; James V. Frick, Western Michigan College of Education; Lester L. Hale, University of Florida; Jack Matthews, University of Pittsburgh (George Shames, University of Pittsburgh, substituted for Dr. Matthews for this issue); Georgianna M. Peacher, Temple University; Sylvia O. Richardson, Children's Medical Center, Boston, Mass.; D. C. Spriestersbach, University of Iowa; Hildred M. Schuell, Veterans Hospital, Minneapolis, Minn.; Jesse J. Villarreal, University of Texas; Charlotte G. Wells, University of Missouri. The committee systematically reviews 203 journals for articles of interest to members of ASHA. Students and other members are encouraged to submit abstracts. Directions for preparing abstracts may be obtained from the abstracts editor.

LASSERS, L. The stutterer in our public schools: how can we help him most effectively. *West. Speech*, 15, 1951, 19-29.

Under the chairmanship of Leon Lassers a panel composed of Margaret Letzter, Ruth Brace, Alma Wedberg, Ruth Clark, James Carrell, and Kenneth Wood discussed such topics as sanity in stuttering therapy, group therapy through creative outlets, types of therapy for discovering and releasing tensions in the stutterer in the primary grades, group therapy for young stutterers, the choice of a basic approach, and the modification of the stutterer's home environment. Members of the panel have written their comments for *Western Speech* in this article. (*C.G.W.*)

DOUGLASS, E. The symptomatology and development of stuttering. *Canad. med. Ass. J.*, 64, 1951, 397-401.

The author confines his discussion to the development and symptomatology of stuttering, presenting one typical case history. He differentiates primary and secondary stuttering clearly, staying close to the bare essentials necessary to enable the reader to grasp the approach to the problem. The thinking is closely allied to that of Wendell Johnson and Charles Van Riper. (*S.J.O.*)

VILLAREAL, J. AND BLACKWELL, T. Projective tests in planning therapy for stutterers. *Sth. Speech J.*, 16, 1951, 251-259.

This article reports an investigation of the use of projective tests as guides to plans of therapy for individual stutterers, on the assumption that stuttering involves the emotions as well as the speech manifestations. The projective tests reveal needs of which the therapist might other remain unaware. (*C.G.W.*)

HOUGHTON, W. G. Rehabilitation of the cleft palate patient. *Amer. J. Orthodon.*, 37, 1951, 611-622.

This article describes in a general way the psychological trauma that can occur in both parents and children because of the presence of a cleft palate, and points out the need for rehabilitation of these people. A background of present day thinking is presented concerning specific rehabilitative procedures. This includes a description and rationale for the Brophy method, and the research findings of Slaughter and Brodie concerning early radical surgery as having a possible traumatizing effect on facial and dental growth. Three cases with illustrations are presented, describing in detail the surgical and orthodontic procedures, the planning, development and use of the required speech appliances, and a general history of their rehabilitation and how it affected their lives. In all of the cases presented emphasis is placed upon preparing the individual for speech therapy, and upon the effects of the over-all therapy program on his social and psychological adjustment. A very detailed description of speech therapy procedures is given. A 'conversational silence' technique is described as a method for breaking down old speech habits and instilling a serious attitude in the patients. This was used for about the first three weeks of therapy. (*G.S.*)

COOPER, H. K. Cleft palate: dentistry's opportunity. *J. Amer. dent. Ass.*, 42(1) 1951, 37-47.

This paper presents a comprehensive view of cleft palate rehabilitation. Although the author recognizes other professions such as psychology, speech correction, and medicine as components of a team approach to cleft palate problems, the primary responsibility is on the dental profession. He supports his thinking by tracing the divorce of dentistry and medicine in both training and treatment. He further intimates that this artificial dichotomy of an individual extends to the semantic level and has influenced the amount of appropriations available for cleft palate rehabilitation. The person as a total integrated unit is emphasized throughout the paper, demonstrating what can happen to a patient when only one aspect of the individual is considered. The effects of too early surgery on facial and dental growth are shown. Many resultant deformities could be avoided with a closer relationship between surgeon and dentist. A functional relationship is also shown between dentistry and speech training. An obturator alone cannot result in normal speech because of the many compensating tongue habits that have developed before palatal rehabilitation. Because the person is being treated as a whole, a psychologist is also thought to be an important member of the team. Since society is becoming more aware of this problem, not only from a medical and dental viewpoint but from a psychological, speech, educational and vocational viewpoint as well, representatives from all of these areas are necessary for the best results. Two typical cases from the Lancaster Clinic are presented

showing the sequence of their rehabilitative procedures as planned and carried through by the professional team approach. (*G.S.*)

HARKINS, C. S. The role of the prosthodontist in the rehabilitation of cleft palate patients. *J. Amer. dent. Ass.*, 43(1), 1951, 29-34.

The article describes seven responsibilities of the prosthodontist in cleft palate rehabilitation. If he is the first specialist contacted, the prosthodontist can assume the role of director of a team of specialists. As director, his responsibilities are: (1) To construct a functional prosthesis for speech, esthetic and mastication purposes. (2) To refer patient to a speech clinician after completion of the prosthesis. (3) To refer patient for plastic surgery if necessary. (4) To become acquainted with the personal, social and emotional problems of the patients and refer them to the proper specialists. (5) To know where financial support can be obtained if necessary. (6) To arrange for follow-up exams of prosthesis and oral cavity. (7) To objectively follow the patient's progress through rehabilitation.

If he is not the first specialist contacted, his responsibilities are limited to those of a co-worker on the team and would include numbers 1 and 6 mentioned above. The article then goes on to describe the allied areas with which a prosthodontist must be familiar if he is to construct a functional speech appliance. Six basic requisites for the construction of a functional speech appliance are listed. These requisites consider the various dimensions and structural properties of the appliance as they are related to the production of speech. (*G.S.*)

BAKWIN, R. M. AND BAKWIN, H. Cerebral palsy in children. *J. Pediat.*, 39, 1951, 113-122.

This article discusses cerebral palsy from the psychological standpoint including a brief resumé of etiology and clinical evaluation. Emphasis is placed on discussion of mental function and personality characteristics, and there is an excellent guide to management of children with this handicap. (*S.O.R.*)

HUBER, M. The speech rehabilitation of the cerebral palsied. *West. Speech*, 15(4), 1951, 13-16.

This presentation of material prepared for a meeting of the Medical Association includes discussion of the types of cerebral palsy; the speech problems associated with it; the effect of the disability on the social, educational, and vocational adjustment; the general sequence of speech therapy in cerebral palsy cases; and the importance of the speech therapist as part of the cerebral palsy team. (*C.G.W.*)

GREEBY, D. McL. Organization of a clinic for care and treatment of children with cerebral palsy. *Arch. phys. Med.*, 32, 1951, 451-455.

A comprehensive program designed to meet the problems of the cerebral palsy patient, family and society should include a group clinic, proper educational facilities, and community activities. A hospital group clinic is described and a treatment program outlined. Main emphasis is placed on the need for a group approach and parent teaching in all phases of cerebral palsy management. (*S.O.R.*)

DENHOFF, E. AND HOLDEN, R. H. Pediatric aspects of cerebral palsy. *J. Pediat.*, 39, 1951, 363-373.

Criteria for evaluating the physical, mental, and emotional aspects of the cerebral palsied in infancy have been given clearly and concisely. The article is directed to developing a fuller understanding of the pediatrician's role in diagnosis, management, and parent counseling. (*S.O.R.*)

DENHOFF, E., SMIRNOFF, V. N. AND HOLDEN, R. H. Medical progress: cerebral palsy (concluded). *New Engl. J. Med.*, 245, 1951, 770-777.

This paper reviews progress made in evaluating and habilitating patients with cerebral palsy. It covers new technics in psychometric testing, projective technics, motor reeducation, orthopedic treatment, neurosurgery, revascularization, drug therapy, speech therapy, etc. They stress the holistic approach with utilization of medical corrective technics, various modalities in physical, occupational and speech therapy and integration of special education and play in the total scheme. Emphasis is placed on an understanding of the emotional handicaps of patients with cerebral palsy and their parents in combination with psychiatric guidance as an essential part of therapy. (*G.M.P.*)

GILLETTE, H. E. Common deformities in cerebral palsy. *Arch. phys. Med.*, 32, 1951, 447-450.

The author briefly discusses the types and treatment of deformities likely to be found in the different types of cerebral palsy cases. She points out that the majority of deformities are seen in spastic and rigidity types, and the most frequent deformities occur at the ankles and knees. (*S.O.R.*)

MARTIN, R. V. AND SPIRO, S. The problem of dental care in cerebral palsy. *Dent. Dig.*, 57, 1951, 211. (Adapted from *Medical Times*, 79, 1951, 214-215.)

This is a brief descriptive article concerned with the approach to dental problems of the cerebral palsied. The importance of knowledge of the type of cerebral palsy is pointed out, and its relationship to dental treatment and anesthesia is shown. The authors state that the presence of speech handicaps could prevent the cerebral palsied child from both reporting and locating his dental problems. Caution is to be exerted in avoiding traumatic incidents, both physical and psychological, which could result in personality and emotional abnormalities. (*G.S.*)

CROTHERS, B. Cerebral palsy in relation to development. *Amer. J. Dis. Child.*, 82, 1951, 1-6.

This presidential address delivered at the last annual meeting of the American Pediatric Society presents a philosophical view of the field of abnormal child development. The author feels that overemphasis has been placed on protection in childhood and that our attention should be directed toward modification of independence in adult life. (*S.O.R.*)

FREEMAN, W. AND WILLIAMS, J. M. Lesions of transorbital lobotomy. *Arch. Neurol. Psychiat.*, 66, 1951, 191-198.

The authors present a report on the necropsy of 15 specimens in which there had been severance of the thalamofrontal radiation for relief of pain and in major psychoses. The findings included minor lesions of the skull and dura with little traumatization of the cortex. (*J.A.H.*)

MILHORAT, A. Progressive muscular dystrophy. *Crippled Child*, 29 (2), 1951, 6-7, 28.

A description of the typical symptoms, progression, and suspected pathogenesis of a disease which cripples thousands of children and adults. (*J.V.F.*)

COHN, R. Interaction in bilaterally simultaneous voluntary motor function. *Arch. Neurol. Psychiat.*, 65, 1951, 472-476.

Bilateral interaction of the cerebrum in voluntary motor acts is discussed. Techniques for precise study of the phenomena and significance of the phenomena in complex voluntary acts and neurophysiological theory are elaborated. (*C.R.E.*)

GUTHERIE, T. Visual and motor changes in patients with multiple sclerosis. *Arch. Neurol. Psychiat.*, 65, 1951, 437-451.

Increased dysarthria is seen, among other responses, in multiple sclerotic patients as a response to total and partial body heating. (*C.R.E.*)

KASTEIN, S. AND HENDIN, J. Language development in a group of children with spastic hemiplegia. *J. Pediat.*, 39, 1951, 476-480.

A study of 67 case histories of children with spastic hemiplegia led the authors to conclude that language development is based on mental potential rather than on the severity or side of the cerebral lesion. (*S.O.R.*)

WOLDRING, S. AND DIRKEN, M. N. J. Site and extension of bulbar respiratory centre. *J. Neurophysiol.*, 14, 1951, 227-241.

The site and extent of the respiratory center in rabbits was studied by two different techniques, the recording of action potentials from spontaneous discharges and from selective localized electrical stimulation. Two separate areas were located, a ventromedial inspiratory area situated mainly in the reticular substance at the level of the entrance of the vagi, and a dorsolateral expiratory area connected with the spinal trigeminal root laterally and having a medial course parallel to the solitary tract. (*C.R.E.*)

DIRKEN, M. N. J. AND WOLDRING, S. Unit activity in bulbar respiratory centre. *J. Neurophysiol.*, 14, 1951, 211-225.

Bulbar respiratory center function of rabbits was studied through the use of amplified spike-potentials obtained via bipolar microelectrodes. Three types of response in respiratory rhythm were distinguished. Central vagal, expiratory, and inspiratory activity showed characteristic frequency curves and response to varied modification of afferent impulse flow. The effect of vagal stimulation of the respiratory centre was felt to be only inhibitory. (*C.R.E.*)

KLINGLER, M. Nystagmus of the soft palate due to trauma. *Schweiz. Arch. Neurol. Psychiat.*, 64, 1949, 253.

The case history of a man 35 years of age at the time of a head injury is presented. Upon examination one year after the injury he was found to show nystagmus on upward gaze and rhythmic myoclonic twitching involving both sides of the soft palate. This twitching was also observed in the posterior wall of the pharynx and in the left vocal cord. (*J.A.H.*)

RUSSELL, W. R. Disability caused by brain wounds. *J. Neurol. Psychiat.*, 14, 1951, 35-39.

Follow-up review of 1,166 cases seen at the Military Hospital for Head Injuries, Oxford, England and in mobile neurosurgical units in various theatres of war. Major emphasis is given to the effects of injuries to different areas of the brain and the problems of rehabilitation. The use of a 'paramount' (punched key-sort) card to facilitate analysis of the cases is described. (*C.R.E.*)

JERVIS, G. A. Brain damage in the child: a sequela of maternal isoimmunization with the B factor. *Amer. J. Dis. Child.*, 79, 1950, 495-496.

A case history is presented of a girl from birth until death at 6 years of age. It is posited that in the absence of Rh incompatibility, erythroblastosis fetalis, jaundice and kernicterus may result occasionally from maternal isoimmunization by the A or B blood factors. (*J.A.H.*)

DOLL, E. Neurophrenia. *Amer. J. Psychiat.*, 108, 1951, 50-53.

Neurophrenia is suggested by the author as a substitute term for 'brain damage' because it provides a more adequate symbol, etymologically and clinically, for both etiological and behaviour factors referred to central organic involvements occurring during these developmental years. The term is further explained, its usefulness argued, and its clinical symptom-complex discussed. (*C.R.E.*)

PASAMANICK, B. Anticonvulsant drug therapy of behavior problem children with abnormal electroencephalograms. *Arch. Neurol. Psychiat.*, 65, 1951, 752-759.

The author reports an experiment carried out in 1946 involving 21 boys between the ages of 6 and 13 years. In some instances a speech defect was a part of the behavior problem presented. Experimental therapy based on the use of amphetamine sulfate, diphenylhydantoin sodium, trimethadione and methylphenylethylhydantoin is described. Effects of the therapies tried are summed up as 'generally disappointing.' (*J.A.H.*)

ANDERSON, F. M. Pneumoencephalography in children. *Bull. Los Angeles neurol. Soc.*, 16, 1951, 125-136.

A review of 400 cases where pneumoencephalography was performed on children exhibiting convulsive disorders, mental retardation, hydrocephalus, suspected neoplasm, and other conditions. Six children (1.5%) died as a result of the encephalography. The present study supports the conclusion that there is no regular correlation between pneumoencephalographic appearance of the brain and intellectual function. Diagnosis and treatment of convulsions were rarely altered by the pneumographic findings. 'Pneumoencephalography in children is concluded to be a relatively simple and safe procedure of considerable value, but proper indications for this procedure should be adhered to and its limitations must be constantly recalled.' (*J.J.V.*)

REINHOLD, M. A case of auditory agnosia. *Brain*, 73, 1950, 203-223.

Description of a case with defective understanding of sounds including speech and music with hearing unimpaired. Discussion of implications for theoretical formulations is presented. (*C.R.E.*)

WATTS, J., HENDERSON, H., KAUMP, D. AND DAVIS, R. M. Oxygen studies of the arterial blood in newborn infants. *Amer. J. Obstet. Gynaec.*, 61, 1951, 1025-1031.

A study of the oxygen levels in the blood of 115 newborn infants is reported. Factors taken into account included anesthetic, analgesia, major obstetrical maneuvers executed, and duration of the second stage of labor. Anesthetics used were open drop ether and block anesthesia. Twelve of the 115 infants showed evidence of asphyxia; maternal factors in these cases were fall in blood pressure, umbilical cord pressure, prolonged second stage of labor, and injudicious use of spinal anesthesia. (*J.A.H.*)

STAINS, K. B. Creative expression. *Instructor*, 61(3), 1951, 31, 73, 81.

According to the author, the modern kindergarten recognizes that creative work is the best stimulant to child growth. He gives examples of how the creativeness of the children is expressed through the daily use of language, dramatic play, music, and art materials. After encouraging creative expression in its various forms, the teacher then is ready to evaluate what has happened in terms of child growth. (*L.L.H.*)

RUSSELL, D. H. AND KARP, E. E. The reading readiness program. *Educ. Dig.*, 17(2), 1951, 45-48.

As background for success in beginning reading, the teacher should plan a rich program of activities which will help give some of the experiences needed. The aim of such activities is to develop the child's social, emotional, visual, auditory, language and listening behavior to the end that he will be able to use higher-level abilities in work with charts and books.

The authors describe some of the activities in which teachers and children may engage before the more formal work with books begins. The activities are for the purpose of developing language abilities and habits of working in a group, left-right direction, visual discrimination, auditory memory and discrimination, and concept building.

It is suggested that the teacher consult a speech teacher or a book on the teaching of speech if the readiness group contains a number of children who have difficulty in enunciating certain sounds. (*L.L.H.*)

GOODYKOONTZ, B. Aids to reading and language in U. S. government publications. *Educ. Dig.*, 17(3), 1951, 40-42.

The author discusses the possibility of using government material as a source of reference or as an aid to the teaching of reading and language. As an example of the effectiveness of the publications, she cites the bulletin *Know Your Capital City*. The use of this bulletin calls for a variety of language arts: reading, outlining plans, discussing, using numerous reference books, reporting as committees.

Procedures for obtaining information about available government publications are included in the article. (*L.L.H.*)

BENDER, L. AND SCHILDER, P. Graphic art as a special ability in children with a reading disability. *J. clin. exp. Psychopath.*, 12, 1951, 147-156.

Reading disability is defined as a clear-cut defect in the visual motor field due to a lag in development of the specific functional patterning in the occipital and parietal lobes. Various points of view concerning reading disabilities are reviewed. The authors consider common factors to be a relative immaturity, and a need to build up defensive mechanisms and compensations. They have found that children with reading disabilities are often able to express themselves well through drawing. They consider drawing a valuable adjunct to therapy because it offers the child a form of visual motor expression in which he can succeed, which increases his confidence. They report that if children with reading disabilities are not given training in remedial reading and some form of outlet, but are pushed to school tasks in which they cannot succeed, they justifiably become behavior problems. Two cases are presented, with examples of the drawings of these children. (*H.M.S.*)

SULLIVAN, M. T. Have fun with phonetics. *Amer. Childh.*, 37(4), 1951, 16-18.

It is advocated that the teacher use childlike imagination to advantage in directing the education of the child. The author believes it is possible to teach phonetics to a child if the teacher presents the material to him in his own language. He may make the lesson a phantasy, merging work and play so thoroughly that the child will never know where play ends and work begins. For example, in teaching the blends *bl*, *pr*, *tr*, *st*, *cr*, *gr* and *pl*, let them be the gruntings of some wild animals. So that they might see how the blends look in print, make rapid sketches of monsters' heads on the blackboard and print the blend (his grunt) under each sketch.

Included in the article are suggestions for varying the presentation from day to day as well as for giving short tests. There is also a brief discussion of the teaching of phonograms, usually called families of sounds. (*L.L.H.*)

GRAY, L. Making it their own. *J. nat. Educ. Ass.*, 40, 1951, 405-406.

The author is interested in developing in students the ability to transfer their reading

vocabulary to their thinking, speaking and writing. It is her opinion that improved American thinking will result from a campaign to protect our threatened language by strengthening our vocabularies.

She discusses the need for written expression, transfer of vocabulary, enriching vocabulary meanings and cultivating clarity. In connection with the last need, she feels that throughout all teaching the attempt should be made to guide the child to cultivate clarity of thinking and expression. (*L.L.H.*)

LATTING, L. H. A program for word analysis. *Instructor*, 61(1), 1951, 37, 115.

It is stated that a child's failure to become independent in word identification often is due to lack of a good readiness program. A program in readiness for word identification should include auditory and visual discrimination, and training in the use of oral context. Experimental teaching has proved that good word discrimination involves both auditory perception and visual perception.

In relation to phonics, the author reports that this method is one of several aids in the process of word identification and recognition. He is not, however, referring to the old phonetic drill, as teaching of word analysis should never be carried out at the expense of actual reading experience.

Also included in the article are answers to 'common questions about word analysis' and a list of 19 principles in word analysis. (*L.L.H.*)

HOCKETT, C. F. Age-grading and linguistic continuity. *Language*, 26, 1950, 449-457.

All languages thus far studied exhibit regular phonetic change. The mechanisms whereby continuity of linguistic tradition is maintained in a community in the face of the constant turnover of population through birth and death, immigration and emigration, are summarized in four propositions: 1. The fundamental speech habits of an individual are in most cases firmly established by the age of puberty. 2. The most important environmental force shaping the emerging dialect of a child is the speech of other children. 3. In any community, there is a continuity of linguistic tradition through successive generations of children. 4. It is within this childhood continuity of tradition that phonetic change, the kind of linguistic change characterizable as 'regular,' takes place.

Available evidence to support these propositions is reviewed, and ways of testing the critical fourth propositon are described. Some information on the achievement of a complete phonemic inventory by young children is included. (*J.J.V.*)

MATIS, M. The application of modern theories of learning to speech therapy. *West. Speech*, 15, 1951, 44-48.

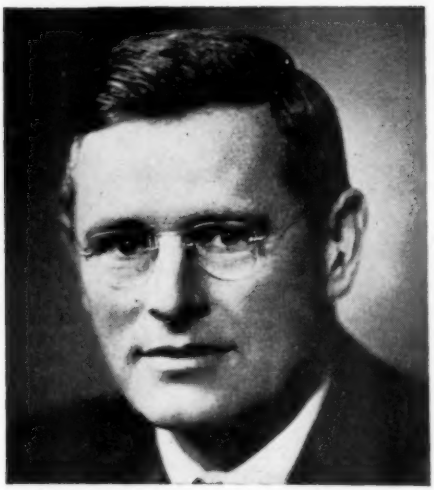
In speech therapy, four points should be kept in mind. First, the therapist should realize that there is a need for understanding that changes can be made. Second, there is a need to change the individual's perception of himself. Third, there is a need for a change in values and needs. Fourth, there is a need for a change in adjustive techniques. (*C.G.W.*)

DELP, H. One-way vision and projection facilities for clinic demonstration and teaching. *J. educ. Psychol.*, 42, 1951, 311-314.

The Psychol-Educational Clinic at the University of Minnesota has attempted to work out a good arrangement for student observation of clinical testing. They have tried wire screen, 'mirror glass,' and other devices to permit observers to watch without being seen or heard. They have worked out a plan for recording interviews or tests on wire and another for projecting material being looked at by the child so that observers can see it at the same time. Brief descriptions of the equipment and consideration of its value are included in the article. (*C.G.W.*)

NEUFELD, W. Relaxation methods in U. S. navy air schools. *Amer. J. Psychiat.*, 108, 1951, 132-137.

Cadets were trained in Jacobson progressive relaxation methods, for three half-hour periods weekly for 10 weeks. Study of nearly 1000 cadets showed a 19 per cent reduction in minor injuries and a 38 per cent reduction of days lost from injuries. Data from other groups suggest improved sleep patterns. (*C.R.E.*)



The American Speech and Hearing Association

presents THE HONORS OF THE ASSOCIATION

to HALLOWELL DAVIS

The Council of the American Speech and Hearing Association votes unanimously that: *the Honors of the Association for distinguished contribution to the field of speech and hearing be awarded to Dr. Hallowell Davis, a statement of this award to be published in the March, 1952 issue of the* Journal of Speech and Hearing Disorders, *together with a portrait of Dr. Davis and a summary of the achievement for which the award is granted.*

—The American Speech and Hearing Association, in convention at Chicago, Illinois, December 29, 1951.

Contributions to Speech and Hearing

Dr. Hallowell Davis has brought to our field a unique scientific versatility and high standard of academic scholarship. His scholarly contributions, particularly concerning the nervous system, have had a stimulating effect in the fields of neurophysiology, electroencephalography, acoustics, biophysics, psycho-physiology and otology. They have had particular bearing in the areas of speech and hearing.

Dr. Davis' eminence as a teacher is attested to by active scientists and clinicians who have come under his instruction and by the numerous students drawn to his laboratories, both at Harvard and Central Institute, from many parts of the world. As an advisor to scientific committees, both in and out of the Government, he has brought his incisive judgment to bear on many questions related to the areas of interest of the American Speech and Hearing Association.

Through all of his distinguished career Dr. Davis has always demonstrated a keen sensitivity to human needs and his counsel has been given freely and understandingly to the many who have sought it. Those who know him well have relished his witty repartee and have been stimulated by his knowing judgments on the political affairs of the day, which seem to fulfill the promise he showed as a brilliant undergraduate student at Harvard from which he graduated *summa cum laude* as class orator and a member of the Student Council. Although he no longer indulges in his undergraduate athletic pastime of broad-jumping, he still plays a very adequate left field on the Department of Otolaryngology softball team. Certainly, it is most consistent with the high standards and purposes of the American Speech and Hearing Association to bestow its highest honors on Dr. Hallowell Davis.

Biographical Summary

Davis, Hallowell, physiologist; b. New York City, August 31, 1896; m. Pauline Allen, 1923, Florence Eaton, 1944; ch. Allen Young, Anna Norwood, Rowland Hallowell.

B.A., Harvard Univ., 1918; M.D., 1922.

Assoc. Prof. Physiol., Harvard Univ., 1936-1946; Acting Head Dept. Physiol., 1942-1943; Assoc. Prof. Physiol., Washington Univ., 1946-1948; Research Prof. Otol., since 1946; Prof. Physiol., since 1948; Director of Research, Central Institute for the Deaf, since 1946.

Member, Amer. Electroencephalographic Soc. (Vice-Pres., 1948-1949; Pres., 1949-1950); Amer. Physiological Soc. (Treas., 1942-46); Acoust. Soc. Amer., Amer. Acad. of Arts and Sciences; Amer. Neurol. Soc.; A.A.A.S.; Amer. Pysch. Assoc.; Amer. Otol. Soc.; Amer. Soc. for Research in Nerv. and Ment. Dis.; Amer. Soc. for Research in Psychosom. Prob.; Nat. Acad. of Sciences; Nat. Forum on Deafness and Speech Path.; Societe Philomathique de Paris; Convent. of Amer. Instruct. of the Deaf; Soc. of Exp. Biol. and Med.; Otosclerosis Study Group, Div. of Amer. Acad. of Ophthal. and Otolaryng.; Phi Beta Kappa; Sigma Xi.

Chairman, Comm. on Hearing, since 1947; Chairman, Ultrasonics Panel, Aeronautical Bd., 1947-1948; Chairman, Comm. on Prob. of Deafness, since 1940; Rep., Div. on Med. Sciences, since 1947, Nat. Res. Counc.; Chairman, Consultants on Audiometers and Hearing Aids, 1948-1949; Chairman, Adv. Comm. on Audiometers and Hearing Aids, since 1950, Amer. Med. Assoc.; Chairman, Subpanel on Vibration, Panel on Aviat. Med., Res. and Devel. Bd., since 1948.

Co-author (with S. S. Stevens), *Hearing*, 1938; Editor, *Hearing and Deafness*, 1947. Contributor of approximately 200 articles to scientific journals.

M. D. STEER

Retiring President

Resolved: That the Association record its deep gratitude for the energetic, earnest, intelligent services of its retiring President, Professor M. D. Steer. His persistent and devoted efforts to gather information concerning ways and means of improving the services of the Association are sincerely appreciated.

—The American Speech and Hearing Association, in convention at Chicago, Illinois, December 29, 1951.

News And Announcements

The State of Iowa has recently revised and upgraded its certification requirements in speech and hearing therapy. The new requirements are presented in Bulletin No. 29 of the State of Iowa Board of Educational Examiners, issued June 1951.

Hofstra College, Hempstead, New York, will offer in September a program of courses leading to a B.A. degree in speech correction. Esther Horowitz is aiding in the development of this new program.

The organizing committee of the Second International Course in Audiology, Stockholm, September, 1951, deemed it advisable to postpone the course to another year.

A two-day hearing and speech conference was held February 29 and March 1 at the University of Kansas Medical Center, Kansas City, sponsored by the Hearing and Speech Department through the Department of Post-Graduate Medicine. Guest speakers included Dr. Wendell Johnson, Dr. Richard Silverman, Dr. Hildred Schuell and Dr. Richard Schiefelbusch.

The fall meeting of the Minnesota Speech Clinicians Association was held November 9 in Minneapolis. Dr. William Fletcher of the University of Minnesota discussed his research on laryngeal acton. Hildred Schuell was elected President and Frances Brown was elected Secretary-Treasurer of the group.

The fall meeting of the Southern Section of the California Speech Association was held at San Bernardino. The two-day sessions were devoted to a study of ways and means of better educating public school children who stutter. Both presentation of papers and small conference discussions were used to develop the topic of the meetings.

At its third annual conference, held in conjunction with the ASHA meetings in Chicago, Sigma Alpha Eta, the national society for students in speech and hearing therapy, elected the following officers: President, Elen Kauffman; Vice-President, Mrs. R. L. Burkland; Secretary, C. Cordelia Brong; Treasurer, Donald Hess; Editor, Margaret Byrne. The general assembly was attended by 43 members representing 14 of the 23 chapters now comprising the organization. The next meeting of its Executive Council will be held April 19 at the Hotel New Yorker in conjunction with the convention of the Eastern Speech Association meetings.

The American Documentation Institute offers some unique services for the research scientist. It is a non-profit organization of scholarly and scientific groups to promote the collection, care, and dissemination of scientific data. It provided many services, among which its microphotography and bibliofilm services are especially helpful. Extensive research reports, published in part in scientific journals, may be deposited for microfilm printing in entirety for particular researcher request. Reproduction of sets of journals on microfilm provide unusual or expensive materials at permissible cost. Photostat or microfilm of obscure reports, original data and little known research are among its helps. For further information write G. Miles Conrad, Secretary of the Institute, Library of Congress, Washington 25, D. C.

The University of Iowa at Iowa City now offers correspondence courses that should be of interest to speech and hearing therapists. Courses currently offered include Speech Correction (a survey course) and General Semantics. For further information write Dr. D. Spriestersbach at the University of Iowa Speech Clinic.

News And Announcements is edited by Charles R. Elliott, Northwestern University, assisted by the following committee: Jane Beasley, University of Alabama; George Gens, Newark (New Jersey) State Teacher's College; Elise Hahn, University of California at Los Angeles; Earl Schubert, University of Iowa.

At the University of Denver last summer a sound film was made in which the techniques of the moto-kinesthetic method of speech correction were demonstrated by their originator, Edna Hill Young.

On January 13 the Northwestern University Reviewing Stand discussed the topic, 'Cleft Palate—A Problem Affecting 550 Newborn Babies Each Year,' over the Mutual Broadcasting System. Copies of the discussion, by prominent leaders in the field, may be had for 10 cents each by writing the Reviewing Stand, Northwestern University, Evanston, Illinois.

Dr. David Ross, psychiatrist and former head of the Seton Institute of Baltimore, has succeeded the late Dr. James S. Greene as Medical Director of the National Hospital for Speech Disorders, New York City.

The Stuttering Team of the University of Iowa is available for speaking engagements. The various teams, made up of 4-5 stutterers, have given over 250 talks, including radio and TV appearances, since their organization in 1945. No fee, other than expenses, is charged. Those interested should write Dr. Wendell Johnson, Director of the Speech Clinic, University of Iowa, Iowa City, Iowa.

The National Psychological Association for Psychoanalysis, Inc., an association of practicing psychoanalysts, has recently been organized in New York City. It provides a training program that is not restricted to medical prerequisites. Further information may be obtained by writing the Association at 9 West 82nd St., New York 24, N. Y.

Two interim reports have been issued by the Counseling Center of the University of Chicago describing its research project on processes and outcomes of client-centered therapy. The Center reports that a few copies of the reports may be made available to directors of research, contemplating or engaged in similar research. Those interested should write Dr. Carl Rogers, Executive Secretary, The Counseling Center, 5737 Drexel Ave., Chicago 37, Illinois.

Syracuse University has announced plans for the construction of a $400,000 building to house its Department of Education for Exceptional Children. Included in the new building will be quarters for the Hearing and Speech Center. In addition to offices and classrooms, there will be four speech and audiometric testing rooms, eight speech therapy rooms, a medical diagnostic room, a hearing-aid evaluation room, a large audiometric testing room with special psychogalvanic equipment, a research laboratory, a large play therapy room and a large group therapy room. Plans for the building were developed by Dr. Louis DiCarlo and Dr. William Cruickshank following a two-months tour of similar facilities last spring. A gift of $150,000 from the James Foundation of New York City will apply toward the construction of the building, which is expected to be ready early in 1952.

The University of Iowa has recently installed a new laboratory for the electro-acoustic and psycho-acoustic analysis and measurement of speech. Between two sound-isolated rooms, one of which is constructed as an anechoic chamber, is a complete recording studio. The laboratory is located on the ground floor of East Hall, adjacent to the Speech Clinic.

The Speech and Hearing Clinic of The Pennsylvania State College has moved from its third floor center into new quarters, at ground level, especially designed, constructed, and equipped for its needs. Over twice the area formerly available is now devoted to 25 rooms, among which, in addition to individual therapy rooms, are seven offices for faculty and secretarial staff, a work room for graduate assistants, two group rooms, a recording room and a play therapy room. Nearby classrooms are available for additional group work. The auditory testing and training unit, including a suspended room on the second floor, have been retained.

Sara Stinchfield Hawk and Edna Hill Young are offering a course in speech correction June 23-July 25, in which the moto-kinesthetic methods are included, with especial adaptation for the handicapped. The course will be conducted at the Young home, 2342 Scarff St., Los Angeles 7, California.

The New York University-Bellevue Medical Center Institute of Physical Medicine and Rehabilitation has moved into its new quarters at First Avenue and East 34th St.,

New York City. This is the first building of the new University section of the Medical Center to be constructed, and is under the direction of Dr. Howard A. Rusk, Dr. Donald A. Covalt and Dr. George Deaver. The Institute offers a complete program of rehabilitation for all types of handicaps for both children and adults. The Speech and Hearing Department of the Institute is under the joint direction of the Department of Physical Medicine and Rehabilitation and the Department of Otorhinolaryngology of the New York University College of Medicine. Chief of the Speech and Hearing Department is Mrs. Martha Turnblom, assisted by Miss Marian Mantell and Mr. James Kronenberger. Consulting otologist is Dr. John Daly and consulting audiologist is Mr. John Duffy of Brooklyn College.

Western Reserve University Summer Session in speech and hearing will offer at the Cleveland Hearing and Speech Center a combination of lectures and observations of individual and group therapy. Experiences will include preschool stutterers, young stutterers, and delayed speech children in groups; also adolescent stutterers, lipreading, esophageal speakers, deaf and hard of hearing from preschool through adult. Professor Albert Douglas of the University of Texas and Texas State School for the Deaf will be among the guest lecturers. An institute on voice pathology will be featured during the second session. The first six-weeks session begins June 16, the second July 28. For further information write Director of Admissions, Western Reserve University, Cleveland 6, Ohio.

The University of Iowa is planning another six-week speech clinic for approximately 50-60 children as part of its summer training and research program. The clinic operates as a residential program from June 23 to August 1, serving boys and girls from 7 to 16 in housing units operated by the clinic. Those interested in positions on the clinic or dormitory staff should write Dr. Frederic L. Darley, Speech Clinic, University of Iowa, Iowa City, Iowa.

The Cleft Palate Training Program and Center of the University of Illinois Medical College and the Illinois Division of Services for Crippled Children offered two short courses February 18-March 1 at the Center in Chicago. The courses, Orthodontics in Cleft Palate and Prosthodontics and Cleft Palate, were designed for orthodontists and prosthodontists engaged in public health and educational programs.

The Speech Seminar on Cerebral Palsy will again be offered in August at the St. Paul Rehabilitation Center. Leaders in the fields of orthopedics, neurology, psychiatry, obstetrics, aphasia and audiology will lecture in their respective fields. Observations of techniques and practical application are included in the course. The course is open only to graduate students; those interested should write Mrs. Berneice R. Rutherford, Director of the Center, 279 Rice St., St. Paul 2, Minn.

Meetings Announced

The American Speech and Hearing Association will meet November 20-22 in Detroit.

The Acoustical Society of America will meet May 8-10 in New York City. Chairman for the meetings is Mr. John S. Parkinson, Johns-Manville Research Laboratories.

The Speech Association of America will meet December 29-31 at the Netherland-Plaza Hotel in Cincinnati, Ohio.

The American Psychological Association will meet September 1-6 in Washington, D. C. For information write: Dr. Filmore H. Sanford, 1515 Massachusetts Ave., N.W., Washington, D. C.

The British College of Speech Therapists will hold a conference April 12-19 at Keble College, Oxford, England. For information write the Conference Secretary, The College of Speech Therapists, 68 Queen's Gardens, London, w.2.

Regional Speech Association Meetings: Central States at Tulsa, Oklahoma, April 18-19; Southern at Jackson, Mississippi, April 4-6; Eastern at New York City, April 17-19; Western during Thanksgiving week, place to be announced.

Regional Psychological Association Meetings: Eastern at Atlantic City, March 28-29; Midwestern at Cleveland, Ohio, April 25-26; Western at Fresno, California, April 25-26.

The American Association for Cleft Palate Rehabilitation will hold its annual meeting April 25-26 at the Chase Hotel, St. Louis, Missouri. Program chiarman is Dr. Cecil R. Conroy of Belleville, Illinois.

New Materials

The September 1951 issue of *What's New*, house organ of Abbott Laboratories, contained a three-page 'Atlas of Laryngeal Pathology' in color, by Dr. Paul H. Holinger. Copies are available through the courtesy of the Abbott Laboratories, 1400 Sheridan Road, North, Chicago, Illinois.

Available from the Committee on Medical Motion Pictures of the American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois is a catalog of 62 16 mm films on various medical topics, some of interest to speech and hearing workers.

Two new recordings, made by Elaine Mikalson (B.S. in speech pathology, Univ. of Minn.) are offered by Pacific Records Distributing Co., 125 N. Grand Oaks Ave., Pasadena 8, California. *Baby Babble Record*, a single disc, 78 rpm, non-breakable record, $2.25, features baby sounds for infants nine months to two years. *Speech Development Records*, consists of three discs, 78 rpm, non-breakable, $7.95, and features stories and songs stressing [s], [l] and [r] for children two to eight years of age.

A 50-page pocket size booklet, *Fundamentals of Magnetic Recording*, is available gratis from Audio Devices, Inc., 444 Madison Avenue, New York 22, New York.

Clinics seeking 'small lot' duplicating of discs and tapes will be interested to note that Flicker Recording Service, Old Greenwich, Connecticut, offers such a service, including a special 'clear space' tape for exercises in phonetics, pronunciation, vocabulary or language study.

Dryden Press has issued two pamphlets, *If You Are Writing a Book, Part I* and *Part II*, suggesting answers to practical questions for the would-be author. Both booklets are distributed gratis by the publisher.

A *1952 Educational Film Listing* catalog is available on request from Sterling Films, Inc., 316 West 57th Street, New York 19, New York. The catalog lists more than 250 late 16 mm sound films in black and white and color.

Compiled by the American Hearing Society, a current list of schools, universities, hospitals and local chapters maintaining hearing aid services on a noncommercial basis is now ready for distribution. Free copies may be obtained by writing to the society's national headquarters, 817 14th Street, N.W., Washington 5, D. C.

The Children's Reading Service, 106 Beekman St., New York 38, New York, has issued its annual *Annotated List of Phonograph Records* covering kindergarten through senior high school. This agency also offers an annotated supplementary reading list for the same school grades, and provides a cooperative plan for economical purchase by educational personnel.

Graduate Assistantships, Fellowships, and Scholarships

This section lists part-time graduate appointments, fellowships, and scholarships specifically designated for graduate work in speech and hearing. General university fellowships and scholarships, unspecified as to area of concentration, and full-time graduate positions will not be included.

Copy should be submitted to the News and Announcements Editor, and should include formal title of appointment, institution, and unit; dates, general duties, and remuneration; name and address of persons receiving applications. Deadline for receiving copy is two months prior to the publication date.

Clinical Assistantships. Purdue University. Speech and Hearing Clinic. Starting September or February. Half-time; 20 hours per week of clinical assistance. $1200 for regular school year; waiver of tuition fees. Student may enroll for 10 semester hours of graduate courses. Address M. D. Steer, Speech and Hearing Clinic, Purdue University, West Lafayette, Indiana.

Clinical Assistantships. University of Illinois. The Speech Clinic, Department of Speech. Starting September or February. Half-time; 20 hours per week of clinical assistance. $1290 for nine months; remission of tuition. Student expected to enroll for three-fourths of normal graduate course load. Address Karl R. Wallace, 138 Lincoln Hall, University of Illinois, Urbana, Illinois.

Clinical Assistantships. University of Southern California. Speech Department. Diagnosis and supervision of cases in the Speech and Hearing Clinic equivalent to 6 or 8 units of work per semester. $80.00 per semester unit of work; free tuition not included. Assistants normally carry 8 to 12 units of study per semester. Address Milton Dickens, Department of Speech, University

of Southern California, Los Angeles 7, California.

Clinical and Research Assistantships. Ohio State University. Department of Speech. Starting June, September, January or March. 15 to 25 hours per week of clinical or research assistance. Two-thirds to three-fourths graduate load. Address W. Hayes Yeager, Chairman, Department of Speech, The Ohio State University, Columbus, Ohio.

Research, Clinical and Technical Assistantships. State University of Iowa. Speech Clinic and Experimental Phonetics Laboratory. Starting September 1. Half-time; 20 hours per week. $720 to $900 for nine months; remission of tuition. Assistants allowed to carry 12 semester hours of course work. Applications for the 1952-53 academic year received until July 1, 1952. Address Wendell Johnson, Speech Clinic, State University of Iowa, Iowa City, Iowa.

Research Assistantships. University of Illinois. The Speech Research Laboratory, Department of Speech. Starting June, September, or February. Half-time; 20 hours per week of laboratory research assistance. $1290 for nine months, or $1577 for eleven months; remission of tuition. Student expected to enroll for three-fourths of normal graduate course load. Address Grant Fairbanks, 321 Illini Hall, University of Illinois, Urbana, Illinois.

Research Assistantships. Purdue University. The Voice Science Laboratory, Department of Speech. Starting September or February. Half-time; 20 hours per week of laboratory research assistance. $1200 for regular school year; waiver of tuition fees. Student may enroll for 10 semester hours of graduate courses. Address M. D. Steer, Voice Science Laboratory, Department of Speech, Purdue University, West Lafayette, Indiana.

Teaching Assistantship. Western Reserve University (Granted by the Cleveland Hearing and Speech Center), Spring and Winter Sessions; 9 hours of tuition exemption each session. $500 for five morning sessions weekly, teaching preschool deaf. Address Director of Admissions, Western Reserve University, 11124 Euclid Ave., Cleveland 6, Ohio.

Teaching Assistantships. Purdue University. Department of Speech. Starting September or February. Half-time; 8 hours per week of clinical work and 12 hours teaching duties in required beginning speech course. $1200 for regular school year; waiver of tuition fees. Student may enroll for 10 semester hours of graduate courses. Address A. H. Monroe, Department of Speech, Purdue University, West Lafayette, Indiana.

Graduate Scholarships. Central Institute for the Deaf. Tuition scholarships for teacher training course in education of the deaf and hard of hearing, and in speech correction. Address Registrar, Central Institute for the Deaf, 818 South Kingshighway, St. Louis 10, Missouri.

Graduate Scholarships. Western Reserve University (Training at the Cleveland Hearing and Speech Center). Remission of full tuition. Applications received immediately. Address Director of Admissions, Western Reserve University, 11124 Euclid Ave., Cleveland 6, Ohio.

Graduate Scholarships. Awarded by the Speech Correction Fund for study at colleges or universities offering training beyond the Master's degree. $500 per year, beginning June or September; applicant must hold the Master's degree, or equivalent, in speech pathology or allied field. Address Mrs. Marceline Jaques, Scholarship Committee, Room 1020, 11 S. LaSalle St., Chicago 3, Ill.

Graduate Scholarships. Awarded for special study in cerebral palsy by Alpha Chi Omega and the National Society for Crippled Children and Adults. Grants vary between $100 and $750 for a minimum of three months at a recognized training center. Address National Personnel Registry and Employment Service, 11 S. LaSalle St., Chicago 3, Ill.

Graduate Scholarships. Kenfield Memorial Scholarship, awarded by the American Hearing Society to prospective teachers of lipreading to the hard of hearing. Available only to college graduates not already teachers of lipreading. Applications must be filed between March 1 and May 1. Address Miss Rose V. Feilbach, 1157 N. Columbus Street, Arlington, Va.

Graduate Scholarship. Grants-in-aid awarded by the Audiology Foundation. $500 per year, for students entering into or already engaged in any branch of audiology, including otology, audiometry, speech, acoustics, and the education of the deaf or hard of hearing. Address The Audiology Foundation, 1104 S. Wabash Ave., Chicago 5, Ill.

Working Scholarships. Western Reserve University (Employment at the Cleveland

Hearing and Speech Center). Remuneration and working time arranged according to demands for clinical service and needs of student. Address Director of Admissions, Western Reserve University, 11124 Euclid Ave., Cleveland 6, Ohio.

Fellowships. Central Institute for the Deaf. Fellowships in education of the deaf and hard of hearing, speech correction, audiology, acoustics, neuro-physiology, experimental otology. Stipends to be arranged according to background and needs of applicant. Address Registrar, Central Institute for the Deaf, 818 S. Kingshighway, St. Louis 10, Missouri.

Fellowships. The Johns Hopkins University. Hearing and Speech Center. Two special fellowships in audiology and speech awarded annually; may be continued at discretion. $3100; no duties beyond satisfactory pursuit of graduate requirements. Applications considered at any time; awards made in June. Address William G. Hardy, Hearing and Speech Center, The Johns Hopkins Hospital, Baltimore 5, Maryland.

Fellowships. University of Wichita (Employment in the Institute of Logopedics). Eight service fellowships; duties primarily clinical. $200 to $250 per month; student is expected to pursue course work toward the M.A. degree. Address Martin F. Palmer, Institute of Logopedics, 2400 Jardine Drive, Wichita 14, Kansas.

Fellowship. State University of Iowa. Fellowship in audiology. Starting September 1. Half-time; 20 hours per week. $1000 for nine months; remission of tuition. Fellows allowed to carry 12 semester hours of course work. Applications for the 1952-53 academic year received until July 1, 1952. Address Wendell Johnson, Speech Clinic, State University of Iowa, Iowa City, Iowa.

News about People

Mildred F. Berry returned in November from a two-months visit in England, Scandinavia, Holland and France. The Ewings in Manchester and Dr. Fogh-Anderson send greetings to their friends in the fields of speech and hearing therapy in the United States.

Leo Doerfler has been promoted to Associate Professor of Audiology and Charlotte Avery has been promoted to Assistant Professor of Audiology at the University of Pittsburgh. Jack Matthews returned in the fall from a research assignment in Japan and Korea, carried out for the Department of the Army through the American Institute for Research.

Louise Davis Davison was given the Alumnae Award at Wesleyan College, Macon, Georgia, for pioneer work and achievement in the field of speech correction in the Southeast.

Ann Madsen Daily is now on the staff of the Jefferson Barracks Veterans Hospital, near St. Louis, Missouri, where she is organizing the speech therapy program.

John L. Boland joined the faculty of the University of Oklahoma last fall. He directs the speech therapy at the Clinic and is assisted by two additional new staff members, Jack E. Pearson and Dorothy L. Burt.

Gilbert C. Tolhurst has joined the staff of Ohio State University and is located at the Acoustic Laboratory, School of Aviation Medicine, Pensacola, Florida. Other Ohio State resident researchers at the laboratory include Chester J. Atkinson and Scott N. Morrill. John J. O'Neill has been appointed Assistant Professor of Speech at Ohio State.

Murray M. Halfond has been appointed Associate in Medical Speech Pathology at Duke University Hospital and Speech Consultant at the North Carolina Cerebral Palsy Hospital, Durham, North Carolina.

Bruce M. Siegenthaler has joined the staff of the Speech and Hearing Clinic of The Pennsylvania State College. Ruth Sydney and Rolland Van Hatten have also been appointed as part-time members of the Clinic staff.

Margaret E. Hall, Director of the Division of Speech Correction of the Chicago Public Schools, reports that the following speech therapists have joined her staff during this school year: Aviva Epstein, Gertrude Kaufman Fishman, Muriel Green Golman, Gladys Savitt Iser, Maurine Scheckman Reinganum and Mary Jane McClintock Wilson.

Philip Hood, who was appointed last fall as Director of Speech Correction for the Tennessee Hearing and Speech Foundation, is now also teaching classes in speech correction at Vanderbilt Medical School in Nashville, Tennessee.

Robert Douglass has been appointed Assistant Director of the Speech Clinic at the

Los Angeles State College, Los Angeles, California.

William Formaad has been appointed Supervisor of Speech and Hearing for the Hamden Public Schools, Hamden, Connecticut.

Phyllis Lundeen has accepted a position as speech therapist for the new preschool Cerebral Palsy Center in Kalamazoo, Michigan.

Mary Huber, on leave from Brooklyn College and directing the Speech Clinic at the May T. Morrison Center for Rehabilitation in San Francisco, will be teaching at Stanford University in the summer quarter.

Milton Brutten has joined the clinical staff of the Deveraux Schools, Devon, Pennsylvania.

Bruce Graham has been appointed Director of the Speech and Hearing Clinic at Bowling Green State University in Ohio.

Charles Lighfoot has joined the staff at Northwestern University to serve as a research audiologist on an Air Force project at the University.

Edwin Shutts has joined the staff of Walter Reed Hospital in Washington, D. C. as an audiologist.

Marie Brittin has accepted a position as instructor on the staff of the Speech Clinic of the University of Wisconsin.

Ernest Buri has been appointed instructor in speech correction in extension for the Speech Department of the University of Nebraska at Lincoln.

Don Davis has joined the faculty of Augustana College, Rock Island, Illinois, as Director of the Speech Clinic.

Freeman McConnell has been appointed Director of the Tennessee Hearing and Speech Foundation at Nashville, Tennessee.

Carol Raymond has joined the faculty of the University of Washington, Seattle, as Instructor in Speech and as a staff member of the Speech Clinic.

Leona S. Burger has accepted a position as speech therapist on the staff of the Utica (New York) Hearing and Speech Center.

Robert Roach has been appointed audiologist at the Institute of Logopedics, Wichita, Kansas.

Donna M. Russell has accepted a position as Director of the Junior League School for Speech Correction of Little Rock, Arkansas.

Richard L. Schiefelbusch has been appointed Director of the Speech and Hearing Clinic at the University of Kansas at Lawrence.

Robert H. Gottsleben has accepted a position as speech therapist at the Vineland Training School, Vineland, New Jersey.

Clark D. Starr has taken a position as speech therapist at the Illinois State Training School for Boys, St. Charles, Illinois.

Dorothy Brandow is setting up a speech correction program for the public schools in Raleigh, North Carolina.

Frank Johnson has accepted a position as speech correctionist for the public school system of Warren, Pa.

McKenzie W. Buck has accepted a position as Assistant Professor of Speech Pathology and Director of the Speech Clinic at Eastern Illinois State College, Charleston.

William R. Tiffany has returned to the University of Washington faculty at Seattle as Assistant Professor of Speech.

Florence K. Craibbe has joined the staff of the Tennessee Hearing and Speech Foundation at Nashville, Tennessee.

Eleanor Cohen has taken a position as speech therapist in the new cerebral palsy unit of the Blythedale Rehabilitation Center at Val Halle, New York.

Necrology

E. Le Roi Jones, Assistant Professor of Speech and Director of Hearing Work at Utah State Agricultural College, died suddenly November 15, 1951, at a hospital in Logan, Utah. Dr. Jones received his bachelor's and master's degrees from Brigham Young University in Provo, Utah, and his doctorate in speech pathology from the State University of Iowa.

REPORT OF THE CONVENTION

American Speech and Hearing Association

CHICAGO, ILLINOIS, DECEMBER 27-30, 1951

COUNCIL MEETINGS

December 26, 1951, 9:40 a.m.

Members present were: M. D. Steer, presiding, Stanley Ainsworth, Ollie Backus, Raymond Carhart, Grant Fairbanks, Margaret E. Hall, Ernest H. Henrikson, Wendell Johnson, Eugene T. McDonald, Gordon E. Peterson, S. Richard Silverman, and Harold Westlake.

Because the arrival of some Council members was delayed, the regular order of business was altered. Ainsworth acted as Secretary pro tem for the morning session.

Moved by Johnson and seconded by Silverman that a telegram expressing the Council's sympathy and hope for a quick and complete recovery be sent to Dr. Robert West. Passed. By common consent Johnson was delegated to write and send the telegram.

Silverman read the following letter from his nine-year-old daughter addressed to the President of the Association:

University City 5, Mo.
December 22, 1951

Dear Sir:

My whole family is very sad because Daddy has to go away on Christmas. We are so mad also that we tried to talk Daddy into staying home. Next time you have a meeting you can count on Daddy not coming. You are taking my father away on Christmas, and on the one and only week he has to rest he must come up to that cold city to attend some silly meeting. Every year he has been away on Christmas or New Years and the whole family is burning up with anger. Why can't you leave him alone on his days of rest? You always make sure the family is not together on a good holiday. Why don't you have it in March? Don't have it in the summer time either.

Love,

Rebecca Ann Silverman

Minutes of 1950 Convention. Moved by Henrikson and seconded by McDonald that the minutes of the 1950 Annual Convention at Columbus, Ohio be approved as published in the March, 1951 *Journal of Speech and Hearing Disorders.* Passed.

Report of Vice-President-Elect. Ainsworth discussed four items of consideration in preparation for the Convention program for 1952. President Steer presented some statistics from a questionnaire he had sent to the Membership, indicating that many members desired workshops on the Convention program, and suggested that the Committee on Convention Program consider this. Report accepted by common assent. A written copy is on file in the office of the Secretary-Treasurer.

Report of the Editor. Fairbanks summarized the major activities of his staff, analyzed the *Journal* content in terms of the type of material published, cited the continued financial and other support of the *Journal* provided by the University of Illinois, mentioned the publication of the Directory and the Cumulative Index to Volumes 1-15, and two Monograph Supplements that are being processed for publication in 1952.

President Steer reported that in response to an open question on his questionnaire, a large number of members expressed a wish for articles concerning therapy, public school speech correction, and bibliographies. Fairbanks mentioned the difficulty he has had in securing acceptable 'practical' articles.

Discussion followed concerning the desirability of reporting research in progress either on the Convention program and/or in the *Journal.* Fairbanks agreed to discuss this matter with the Editorial Staff.

Moved by Johnson and seconded by Henrikson that the report of the Editor be accepted with commendation for excellence of the *Journal.* Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

President Steer reported that due to Vice-President Harlan Bloomer's recent illness, he had appointed Kopp to take over the necessary duties of the Program Chairman. (Due to Bloomer's recovery, Kopp performed no duties of Program Chairman.)

Report of Committee on Ethical Practice. Silverman read Chairman Brown's report exclusive of the revised Code of Ethics.

Moved by Carhart and seconded by Backus that report be accepted.

Fairbanks asked about the publication problems regarding the report. Inter-organizational relationships were discussed and the need for transmitting the code to all ASHA members and to members of other associations was emphasized.

Moved by Fairbanks and seconded by Henrikson that the report be tabled. Passed.

Report of the Committee on Terminology. The report prepared by the Chairman, Samuel D. Robbins, was read by Fairbanks, a member of the Committee. Robbins stated in the report that at a meeting of all members of the Terminology Committee present at the 1950 Annual Convention, it was voted unanimously not to call the next meeting of the Committee until the duties of the Committee had been defined. As the duties of the Terminology Committee have not yet been defined, the Committee did not meet during 1951.

Moved by Fairbanks and seconded by Carhart that the report be accepted. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Committee on the Mid-Century White House Conference on Children and Youth. Johnson explained that plans and policies have been formulated by the Mid-Century White House Conference regarding publication of reports and records, and that reports prepared by the ASHA Committee are now being processed for printing. Available reports may be obtained from the national office of the Mid-Century White House Conference on Children and Youth, Federal Security Agency, Washington 25, D.C. Johnson quoted a paragraph from the report of the Executive Vice-President of ASHA, December, 1951, concerning the Mid-Century White House Conference and moved that the Committee on the Mid-Century White House Conference on Children and Youth be discontinued, its remaining functions, if any, to be delegated to the Executive Vice-President. Fairbanks seconded the motion. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Speech Correction Fund Committee. Chairman Johnson presented the report. During 1951 two main developments have occurred: (1) A Speech Correction Fund Scholarship has been established. This is a $500.00 scholarship. Eligibility requirements include the M.A. degree or its equivalent. Applications so far received are to be reviewed by the committee presently, with a view toward evaluation of experience to date in administering eligibility requirements and scholarship policy generally. It is hoped that the first scholarship may be awarded within the next few weeks or months. (2) The National Society for Crippled Children and Adults, Inc., at its last annual meeting in the fall of 1951, definitely established a research foundation and provided for its support through a proportion of the annual income from the sale of Easter Seals, and other possible sources of funds.

In view of this development, the Chairman of the Committee investigated, by communicating with Lawrence J. Linck, Executive Director of the National Society for Crippled Children and Adults, the possibility of associating the Speech Correction Fund functionally with the new research foundation. Mr. Linck pointed out in a letter dated November 26, 1951, that to date the National Research Foundation is not yet 'actually in operation,' and that action should be postponed accordingly. It is the feeling of the Committee Chairman that consideration should be given, when it becomes feasible to do so, to placing the Speech Correction Fund administratively under the New National Research Foundation, provided (a) the Executive Council of the American Speech and Hearing Association retains professional control of the expenditure of research and scholarship funds within its field, and (b) contributions may be made by donors directly to the Speech Correction Fund or, if made to the National Research Foundation, earmarked for expenditure within the field of speech pathology. In the meantime, the recommendation is made that the Speech Correction Fund Committee be continued.

Moved by Henrikson and seconded by Backus that the report of the Speech Correction Fund Committee be accepted. In the discussion which followed, Steer asked that the Committee settle whether we shall recommend people or projects, or both for the use of this fund. Motion passed.

A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Committee on National

Registries. Chairman Johnson presented the report. Correspondence was carried on during 1951 with governmental officials concerning the possibilities of including speech pathologists and audiologists in appropriate national registries of professional personnel. It is recommended that the study of this problem be continued and that the committee report to the Council by mail or in regular meeting before taking final action.

Moved by Johnson and seconded by Peterson that the report be approved. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Committee on Nominations. Johnson stated that the Committee could not present its report at this time due to difficulties he had encountered in securing nominations from Committee members. He recommended that the Council change the structure of the nominating committee.

Committee on Reorganization. Moved by Johnson and seconded by Hall that the Special Reorganization Committee and its Advisory Committees be dissolved. Passed.

Report of Committee on Clinical Certification. Hall outlined the responsibilities of this Committee and explained that it had been impossible for the Committee to take action on any applications for certification because the Committees on Clinical Standards in Speech and Clinical Standards in Hearing had not completed the formulation of certification requirements. The Committee, therefore, could only receive applications for certification.

The report presented a detailed analysis of the applications received as well as an analysis of the area specification sheets mailed to the Chairman by the Membership.

Moved by Johnson and seconded by Henrikson that the report be accepted. Fairbanks asked that a section of the report pertaining to publication be deleted. It was agreed by common consent that the reference was not binding on the Editor. Considerable discussion followed on manner of listing members in the Directory. Motion passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Recessed from 12:05 p.m. until 1:30 p.m. Harlan Bloomer and George A. Kopp were additional Council members present for the afternoon session.

Time and Place of 1952 Convention. Henrikson reported the Committee's recommendations that ASHA meet either in Chicago, Illinois or Detroit, Michigan in 1952. Hotels were available on certain dates in October and November in both cities.

Moved by Carhart and seconded by Backus that we meet in Detroit on November 20, 21, 22, 1952 at a hotel to be selected by the Secretary-Treasurer. Passed.

Moved by Fairbanks and seconded by Carhart that the Secretary-Treasurer inform the National Society for the Study of Communication of our forthcoming convention and cordially invite the Society to join us in convention. Lost.

Jeanette Anderson Hoffman, a member of the former Committee on Education, who had been asked by President Steer to join the Council for purposes of discussing problems of clinical certification, appeared, and the problems were discussed informally.

Report of the Committee on Constitutional Revision. Elaine Pagel Paden presented a revised draft of the proposed By-Laws as published in the December, 1951 issue of the *Journal* and as distributed to members of the Council. Dr. Paden explained that many helpful suggestions had been received by the Committee from Councilors and Members and that so far as possible the suggestions had been included in the revision. Moved by McDonald and seconded by Fairbanks that the report be accepted for consideration. Passed.

President Steer complimented the Chairman and members of the Committee on the work they had done and with the consent of the Council resolved the meeting into a Committee of the Whole for consideration of the proposed By-Laws.

During the afternoon the Council discussed each Article of the By-Laws separately and agreed upon several revisions to be made by the Committee.

Council recessed from 6:05 p.m. to 8:15 p.m., and reconvened as a Committee of the Whole, with additional members present: Spencer F. Brown and Charles Van Riper.

With approval of the members present, the President ordered the Council back into regular session and instructed the Committee on Constitutional Revision to make the revisions suggested by the Council and report back at the next meeting.

Report of the Secretary-Treasurer. Kopp reported the execution of the instructions of the Council and Members in regard to: stationery, disposition of the *Dictionary*, postal ballots, microfilming of the minutes, purchasing of gavels for past presidents, auditing of books for the fiscal year June 30, 1950-June 30, 1951, and the purchasing of fire insurance for the ASHA inventory at Wayne University and Danville, Illinois.

Moved by Kopp and seconded by Ainsworth that the report be accepted. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Committee on Budget. Kopp presented a report on the financial status of the Association, including the official auditor's report, June 30, 1951, a detailed statement of income and expenses for the period July 1, 1950 to June 30, 1951, a comparative statement of income and expenses for the past five years, an inventory of the *Journal of Speech and Hearing Disorders* and a balance sheet as of November 30, 1951. Moved by Kopp and seconded by Peterson that the report be accepted. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer. (An extract from the report is printed following these minutes.)

Moved by Brown and seconded by Fairbanks that the Committee on Budget be instructed to investigate the possibility of investing some of its reserve fund in short term investments. Passed.

Report of Committee on Membership. Kopp explained the work of the Committee in soliciting new members and reported that 460 applications had been approved for Membership and 290 approved for Associateship. Moved by Kopp and seconded by Hall that the report be accepted. Passed.

Kopp presented the Committee's suggested procedure for processing applications for Membership for persons holding degrees from foreign universities. The proposed procedure was to accept an evaluation of the credentials as made by an accredited graduate school.

Silverman suggested that perhaps the Committee on Membership could obtain an evaluation of foreign transcripts from the Institute of International Education, New York, New York.

Moved by Hall and seconded by Brown that the Committee on Membership work out the procedure and submit it by mail for Council action. Passed.

Moved by Van Riper and seconded by Fairbanks that requests for reciprocal membership and certification from professional workers in foreign countries be processed on an individual basis according to the By-Laws. Passed.

The Committee on Membership recommended Jane Bliss Taylor for Honorary Life Membership. Moved by Kopp and seconded by Hall that this recommendation be approved. Passed.

Report of Committee on Ethical Practice. Brown reported that due to revision of the Code of Ethics he had not had time to make copies of the part of his report that had not been presented by Silverman in the morning meeting. The Secretary-Treasurer was instructed to get the Code of Ethics mimeographed and distributed to members of the Council before the next meeting.

Report of Committee on Honors. President Steer asked Fairbanks, a member of the Committee, to read the report. It was the recommendation of the Committee that Silverman write the resolutions for the Association. Approved by general consent.

Fairbanks read the definition of Fellowship as formulated by the Committee (see statement printed following the minutes). Moved by Henrikson and seconded by Ainsworth that the definition of Fellowship be approved. Passed.

In consideration of the definition of Fellowship, and the recommendation of the Committee on Honors, the Council elected the following Members to Fellowship: Stanley Ainsworth, Louis DiCarlo, E. Thayer Curry, Leo Doerfler, William G. Hardy, Ira Hirsh, Jack Matthews, Miriam D. Pauls.

It was recommended by the Committee on Honors that the Honors of the American Speech and Hearing Association be awarded to Dr. Hallowell Davis.

Moved by Johnson and seconded by Carhart that Dr. Hallowell Davis be awarded the Honors of the Association. Passed.

President Steer reviewed the contents of a communication that he had received from Charles R. Elliott and with the consent of the Council, referred (1) the suggestion for additional public service pamphlets and publication of a list of supervisors of speech and hearing to the Editor, (2) the proposal for an accelerated campaign to get undergraduate students to subscribe to the *Journal* to the Business Manager of the *Journal.*

The Secretary-Treasurer was instructed to standardize the stationery used by the officers and committee chairmen of the Association.

Disposition of the matter of definition of speech correction as contained in the *Dictionary of Occupational Councilors* was referred to McDonald, Chairman of the Committee on Clinical Certification.

President Steer mentioned the invitation of the American Academy of Pediatrics to ASHA to participate in the Toronto Convention and his appointment of Charles Strother and Harlan Bloomer to represent the Association at that meeting.

It was agreed that ASHA should not affiliate with the International Association for Logopedics and Phoniatrics at this time, and that the Executive Vice-President and Chairman of the Liaison Committee should inform the President of that Society of this discussion.

Adjourned 12:05 a.m., December 27, 1951.

December 28, 1951, 8:00 p.m.

Members present were: M. D. Steer, presiding, Stanley Ainsworth, Ollie Backus, Spencer F. Brown, Grant Fairbanks, Margaret E. Hall, Ernest Henrikson, George A. Kopp, Eugene T. McDonald, Gordon E. Peterson, S. Richard Silverman, and Harold Westlake.

Report of the Committee on Nominations. In consideration of the report of the Committee on Nominations read by President Steer, the Council approved the following nominees:

President-Elect: S. Richard Silverman
Vice-President-Elect: Margaret E. Hall
Secretary-Treasurer: George A. Kopp
Chairman, Committee on Ethical Practice: Spencer F. Brown
Councilors: Myfanwy E. Chapman, E. Robert Harrington

Rental of Safety Deposit Box. Moved by Fairbanks and seconded by Henrikson that George A. Kopp, Secretary-Treasurer, and Martha Tuck, Administrative Assistant to the Secretary-Treasurer, be authorized to rent a safety deposit box at the National Bank of Detroit to store records of the American Speech and Hearing Association. Passed.

Dues. Moved by Kopp and seconded by Backus that the dues for Members of the ASHA be reduced to $6.00 per annum. Lost.

Moved by Brown and seconded by Ainsworth that the present dues, $8.00 for Members, $4.00 for Associates, be continued indefinitely. Passed.

Subscription to Journal. Moved by Brown and seconded by Silverman that the subscription to the *Journal* be $4.00 per annum. Lost.

Report of the Committee on Constitutional Revision (cont.). Dr. Paden enumerated the changes made in the By-Laws as instructed by the Council and presented two alternative wordings for Article XIII.

Council resolved itself into a Committee of the Whole to clarify intent and wording of Article XIII in regard to procedure of initiating and passing an amendment to the By-Laws.

Council reconvened and it was moved by Brown and seconded by Hall that Article XIII be accepted as revised. Passed.

Moved by Kopp and seconded by Van Riper that the term of office of officers except that of the Secretary-Treasurer, begin on January 1. Passed.

Moved by Ainsworth and seconded by Hall that the report of the Committee on Revision of the Constitution be accepted with commendation. Passed.

Report of the Committee on Clinical Standards in Speech. McDonald summarized the detailed report of the Committee.

The Council resolved itself into a Committee of the Whole to consider each section of this report.

Adjourned at 1:40 a.m.

December 29, 1951, 9:00 a.m.

Members present were: M. D. Steer, presiding, Stanley Ainsworth, Ollie Backus, Spencer F. Brown, Raymond Carhart, Margaret E. Hall, George A. Kopp, Eugene T. McDonald, Gordon E. Peterson, S. Richard Silverman, Charles Van Riper, and Harold Westlake.

Report of Committee on Committees. Westlake read the names of persons proposed for Standing Committees as provided for by the By-Laws, as well as for Special Committees for the year 1952. (This report is printed in full elsewhere in this issue.) The Council considered and approved each Committee separately.

Moved by Backus and seconded by McDonald that the report of the Committee on Committees be accepted. Passed.

President Steer recognized Carhart to present a matter that had been discussed that afternoon at a meeting called by Dr. Merle Ansberry in regard to problems confronting speech and hearing clinics holding veterans contracts. After presenting the problem, Carhart moved and Backus seconded that a Committee on Minimum Requirements for Hearing Clinics consisting of the following members: Jack Bangs, George Falconer, Wallace A. Goates, John Keys, Donald Markle, S. Richard Silverman, Jesse J. Villarreal, Raymond Carhart, Chairman, be established. Passed.

Moved by Carhart and seconded by Peterson that the above committee be empowered to communicate with the sub-committee investigating the same matter established by the consultants on hearing aids and audiometers of the American Medical Association. Passed.

Kopp raised the question of expenses for the committees recommended by Carhart.

Moved by Henrikson and seconded by Kopp that the Committee on Budget be authorized to approve expenses of the committees. Passed.

Resolutions. Silverman read the Resolutions he had prepared for the Committee on Honors. Approved with commendation.

President Steer agreed to write letters to the presidents of the universities that have provided financial and other help to ASHA during 1951.

Report of the Committee on Clinical Standards in Speech (cont.). Council resolved itself into a Committee of the Whole to finish discussing McDonald's report. After each section had been approved or revised, the Council was reconvened in business session.

Moved by Backus and seconded by Brown that the report of the Committee on Clinical Standards in Speech be accepted with commendation. Passed.

McDonald was asked to submit the approved report at the afternoon Business Meeting and to mail a copy of the report as revised to each member of the Council. A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Committee on Clinical Standards in Hearing. Doerfler summarized the work of the Committee and its recommendations. The Council was resolved into a Committee of the Whole for discussion of the general principles proposed by the Committee, requirements for advanced certification in hearing, requirements for basic certification in hearing, and post-academic experience.

The Council returned to business session and it was moved by Hall and seconded by Carhart that the report of the Committee on Clinical Standards in Hearing be approved with commendation. Passed.

Doerfler was requested to present the approved report at the Business Meeting and to mail a copy of the report as revised to each member of the Council. A written copy of this report is on file in the office of the Secretary-Treasurer.

Procedure for Accreditation of Training Centers. Moved by Henrikson and seconded by Carhart that the Committee on Clinical Standards in Hearing study the procedure for accrediting training centers during the coming year. Passed.

Moved by Backus and seconded by Henrikson that the Committee on Clinical Standards in Speech study the procedure for accrediting training centers during the coming year. Passed.

Report of the Committee on Ethical Practice (cont.). This report was taken from the table and Brown completed it by reading the revised Code of Ethics.

Moved by Henrikson and seconded by Backus that the report of the Committee on Ethical Practice be accepted. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer.

Report of the Executive Vice-President. Henrikson mentioned that the part of his report dealing with time and place of the 1952 convention had been considered. No consideration had been given to the recommended time and place of the 1953 convention. Clarification was requested of his responsibilities as Executive Vice-President, Chairman of the Liaison Committee, and Chairman of the Committee on Time and Place of Conventions.

Moved by Hall and seconded by Carhart that the report of the Executive Vice-President be accepted. Passed.

Adjourned 12:30 p.m.

December 29, 1951, 5:00 p.m.

Members present were: Harold Westlake, presiding, Stanley Ainsworth, Raymond Carhart, Grant Fairbanks, Margaret E. Hall, George A. Kopp, and Eugene T. McDonald.

Honorary Life Membership in ASHA was approved for Miss Alice W. Mills. President Westlake was requested to send Miss Mills the notification of this Council action.

McDonald presented his need, as Chairman of the Committee on Clinical Certification, for a part-time secretary to expedite the work of his office.

Moved by Carhart and seconded by Hall that the Committee on Budget, with the approval of the Council, be empowered to provide the Chairman of the Committee on Clinical Certification with a budget to be recommended by McDonald. Passed.

Adjourned at 5:35 p.m.

Business Meetings

December 27, 1951, 8:00 p.m.

President M. D. Steer called the meeting to order.

Minutes of 1950 Meeting. Moved by Joseph M. Wepman and seconded by Charles Pedrey that the reading of the minutes of the 1950 Annual Convention be dispensed with and approved as they had been published. Passed.

Reports of Officers. President Steer reviewed and summarized the reports of President-Elect Harold Westlake, Vice-President

Harlan Bloomer, and Vice-President-Elect Stanley Ainsworth.

The Secretary-Treasurer's report was abstracted by George A. Kopp. He moved and Grant Fairbanks seconded that the report be approved. Passed.

The report of the Editor was reviewed by Fairbanks.

Reports of Standing Committees. Committee on Membership. Kopp summarized the report of this committee.

Committee on Honors. President Steer reported that upon the recommendation of the Committee on Honors, the Council nominated Dr. Hallowell Davis for the Honors of the Association for 1951. Moved by Fairbanks and seconded by Frank M. Lassman that the nomination be approved. Passed.

The definition of Fellowship was read as approved by the Council. Moved by Wepman and seconded by Martin F. Palmer that the definition of Fellowship be approved as read. Passed.

The list of persons voted to the Fellowship by the Executive Council was read.

Committee on Terminology. President Steer explained the report of this Committee and the Council action.

Committee on Speech Correction Fund. President Steer abstracted this report and the Council action.

Moved by Leo G. Doerfler and seconded by Ernest H. Henrikson that the actions of the Council on reports of the standing committees be approved. Passed.

Committee on Budget. Kopp presented an outline of the report of the Committee on Budget. He moved and Ruth Steer seconded that the report be accepted. Passed.

Committee on Mid-Century White House Conference. This report and the recommendation of the Committee and the Council action were summarized by President Steer.

Moved by Elvena Miller and seconded by Alan B. Clemons that the Council action on the report of the Committee on Mid-Century White House Conference be approved. Passed.

Time and Place of 1952 Convention. President Steer presented the recommendation of the Council that the 1952 Convention be held in Detroit, November 20, 21, 22, at a hotel to be selected by the Secretary-Treasurer. Moved by Fairbanks and seconded by Louis M. DiCarlo that the time and place of the 1952 Convention as recommended by the Council be approved. Passed.

Council Actions. President Steer enumerated the suggestions that had been received from Charles R. Elliot and a communication he had received from Frances A. Mullen and included the specific disposition that had been made of each suggestion.

President Steer reported the progress of the Executive Council in discussing the proposed new By-Laws, stating that they would be presented for vote of the Association at the next business meeting on December 29, and asked for suggestions as to procedure. The meeting was resolved into a Committee of the Whole for purposes of this discussion.

The meeting returned to regular session and it was agreed by common consent that, since a proposed draft of the By-Laws had been published in the *Journal*, detailed consideration at the next business meeting would be given only to subsequent revisions of that draft on the part of the Executive Council.

New Business. Wepman requested that chairmen of future program committees take into consideration the time needed for the last business meeting. The last business meeting usually interferes with the attendance at program meetings and he hoped that something could be done about the forthcoming Saturday meeting.

A discussion followed concerning ways of securing more time for the December 29 business meeting.

Moved by Pedrey and seconded by Wepman that the Saturday Business Meeting start at 12:45 p.m. Passed.

President Steer instructed the Secretary-Treasurer to prepare and circulate to all chairmen of meetings on Friday and Saturday morning a notice of the change in time of the Saturday Business Meeting.

Elvena Miller requested that the Council give more consideration to public school workers in nominating committee and Council members.

Adjourned 10:40 p.m.

December 29, 1951, 12:45 p.m.

President Steer called the meeting to order.

Council Actions. Steer reported the action of the Council in authorizing the Secretary-Treasurer and his administrative assistant to rent a safety deposit box at the National Bank of Detroit to store records of the American Speech and Hearing Association.

Moved by Spencer F. Brown and seconded by Raymond Carhart that the action of the Executive Council on rental of safety deposit box be approved. Passed.

Steer presented the Council recommendation that the present dues, $8.00 for Members and $4.00 for Associates, be continued indefinitely.

Moved by James F. Curtis and seconded by Brown that the action of the Council on dues be approved. Passed.

President Steer explained that the report of the Executive Vice-President was received for consideration by the Council, but that the Business Meeting need take no action other than that already taken regarding the time and place of the 1952 Convention.

Election of Officers, Councilors, and Committee Chairmen. Steer presented the nominations of the Council:

President-Elect: S. Richard Silverman
Vice-President-Elect: Margaret E. Hall
Secretary-Treasurer: George A. Kopp
Councilors: Myfanwy E. Chapman, E. Robert Harrington
Chairman, Committee on Ethical Practice: Spencer F. Brown.

Moved by Westlake and seconded by Carhart that the nominations be accepted for consideration. Passed.

Moved by Carhart and seconded by Curtis that the Secretary cast a unanimous ballot for the officers, councilors, and committee chairmen nominated by the Council. Passed.

Report of Committee on Committees. Westlake read the list of committee appointments.

Constitutional Revision. At the request of President Steer, Fairbanks summarized the changes that the Council had made in the proposed By-Laws as published.

Moved by Margaret Hall and seconded by Charlotte Wells that the By-Laws as revised by the Council be approved. (The new By-Laws are published elsewhere in this issue.)

In the discussion which followed, Curtis suggested that consideration should be given to the method of nominating officers. He recommended that two nominees be listed for each office.

Claude Kantner moved and Clemons seconded to amend Article XIII of the By-Laws by striking out the term, 'two thirds' and inserting the word, 'majority.' Passed.

Main motion passed.

Moved by Ira Hirsh and seconded by Fairbanks that the President encourage the Committee on Nominations next year to submit more than one candidate for each office. Passed.

Report of the Committee on Clinical Standards in Speech. Chairman McDonald presented an over-all outline of the recommendations of the Committee on Clinical Standards in Speech as revised and approved by the Council. He then proceeded with a detailed explanation of the recommendations for the Basic Certificate in Speech.

Moved by Warren Gardner and seconded by Doerfler that the proposed requirements for the Basic Certificate in Speech be approved. Passed.

McDonald explained the 200 clock hours requirement as provided in the recommendations.

Moved by John Gaeth and seconded by Wepman that the recommendation of the Council on the 200 clock hours requirement be approved. Passed.

McDonald explained in detail the recommended requirements for the Advanced Certificate in Speech.

Moved by Gardner and seconded by Carhart that the recommendation of the Council on requirements for Advanced Certification in Speech be approved. Passed.

McDonald next presented an explanation of supervised experience requirements as defined by the Committee and recommended by the Council.

Moved by Jack Matthews and seconded by Wallace A. Goates that the report of the Committee on Clinical Standards in Speech be accepted in full. Passed.

A written copy of this report is on file in the office of the Secretary-Treasurer. (An outline of the requirements together with an explanatory statement will be published in the June issue.)

Report of the Committee on Clinical Standards in Hearing. Doerfler explained the recommendations of the Committee on Clinical Standards in Hearing as revised and approved by the Council on the requirements for the Basic Certificate in Hearing.

Moved by Matthews and seconded by Hirsh that the recommended requirements for the Basic Certificate in Hearing be approved. Passed.

Moved by Gaeth and seconded by Hirsh that a part of the 200 clock hours required for the Basic Certificate in Speech be accepted in the requirements for the Basic Certificate in Hearing.

Doerfler, assisted by Steer, explained the 200 hours practice training requirement that was recommended.

Moved by Glenn J. Taylor and seconded by Carhart that 200 clock hours be required and that a limited number of hours may be in speech correction. Passed.

Moved by Matthews and seconded by Gaeth that the form for reporting super-

vised training as approved by the Council be accepted. Passed.

Doerfler explained the requirements for the Advanced Certificate in Hearing as recommended by the Committee and as revised and approved by the Council.

Moved by Hall and seconded by Kopp that the 60 hour requirement for the Advanced Certificate in Hearing as approved by the Council be accepted. Passed.

Moved by Gaeth and seconded by Westlake that the recommended supervised experience requirement be approved. Passed.

Moved by Carhart and seconded by Hall that a favorable recommendation from the director of a unit offering advanced degrees in the field of speech and hearing be a requirement for the Advanced Certificate in Hearing. Passed.

Doerfler presented the recommendation that the fourth requirement for the Advanced Certificate in Hearing be an examination.

Fairbanks spoke in opposition to the examination requirement.

Moved by Gaeth and seconded by Carhart that the recommendations of the Committee and Council on the examination requirement for the Advanced Certification in Hearing be accepted. Passed.

The recommendation of the Committee as approved by the Council on the accreditation of training centers was presented by Doerfler.

Moved by Matthews and seconded by Carhart that the report of the Committee on Clinical Standards in Hearing be approved in full. Passed. A written copy of this report is on file in the office of the Secretary-Treasurer. (An outline of the requirements together with an explanatory statement will be published in the June issue.)

President Steer extended the appreciation of the Membership to McDonald and Doerfler and the Committees on Clinical Standards in Speech and Clinical Standards in Hearing for the excellent work they had done for the Association.

Code of Ethics. In the absence of Chairman Brown, Fairbanks was asked to read the Code of Ethics for the Committee on Ethical Practice. Moved by Fairbanks and seconded by McDonald that the Code of Ethics be approved. Passed. (The final statement of the Code of Ethics will be published in the June issue.)

Grandfather Clauses. Moved by McDonald and seconded by Doerfler that the grandfather clauses as approved by the Council in the reports of the Committee on Clinical Standards in Speech and the Committee on Clinical Standards in Hearing be accepted. Passed.

President Steer asked Elaine Pagel Paden to stand and receive the applause of the Association for her work as Chairman of the Committee on Constitutional Revision.

At the request of President Steer, Fairbanks read the following Resolutions:

Resolved: That the Association record its deep gratitude for the energetic, earnest, intelligent services of its retiring President, Professor M. D. Steer. His persistent and devoted efforts to gather information concerning ways and means of improving the services of the Association are sincerely appreciated.

Resolved: That the Association record its heartfelt gratitude and satisfaction for the fruitful efforts of Vice-President Harlan Bloomer in preparation of the instructive and well planned program developed for the 1951 convention.

Resolved: That the Association point with justifiable pride to the imaginative, dedicated, editorial leadership of Professor Grant Fairbanks.

Resolved: That the Association record its appreciation to associated groups for their cooperative efforts in staging the joint 1951 convention.

Resolved: That the Association express its sincere appreciation to the Committee on Local Arrangements and its Chairman, Jayne Shover, and Co-Chairman, Dr. John Gaeth, for its efficient activities in staging the 1951 convention.

Resolved: That the Association express its appreciation to the staff of the Conrad Hilton Hotel for its gracious assistance in making the 1951 convention a success.

Resolved: That the Association record its gratitude to the Committee on Constitutional Revision under the intelligent, efficient leadership of Dr. Elaine Pagel Paden for brilliant consummation of the the difficult and challenging task assigned them.

Resolved: That the Association record its sincere appreciation to the Committee on Clinical Standards in Speech under the tireless, efficient and intelligent leadership of Dr. Eugene McDonald, and similarly to the Committee on Clinical Standards in Hearing under the equally intelligent and indefatigable leadership of Dr. Leo Doerfler for their tremendous and abundant efforts in the vital and significant tasks assigned them by the Association.

Resolved: That the Association express its continuing satisfaction to Lawrence J. Linck, Executive Director, and Miss Jayne Shover of the National Society for Crippled Children and Adults, Inc., for the mutually constructive relationship which exists between the two organizations.

Moved by Fairbanks and seconded by Carhart that the Resolutions as read be adopted. Passed.

Program Committee. Stanley Ainsworth read the list of members of the Program Committee.

Moved by Carhart and seconded by George Herman that the Council action on Committee on Minimum Requirements for Hearing Clinics be approved. Passed.

President Steer thanked the officers, Council, members of committees, and Members for their cooperation during the past year, expressed his appreciation for the privilege and pleasure of serving as President and turned the gavel over to President-Elect Harold Westlake.

Westlake accepted the gavel and immediately presented it to Steer as a symbol of appreciation of the Association for his work as President.

Meeting adjourned 4:55 p.m.

MEMBERS ELECTED TO FELLOWSHIP

Stanley Ainsworth
Louis DiCarlo
E. Thayer Curry
Leo Doerfler
William G. Hardy
Ira Hirsh
Jack Matthews
Miriam D. Pauls

COMMITTEE APPOINTMENTS

Standing Committees

Committees (Officers; President-Elect, Chairman)

1. *Stanley H. Ainsworth*
2. *Grant Fairbanks*
3. *Ernest H. Henrikson*
4. *George A. Kopp*
5. *Harold Westlake*
6. *S. Richard Silverman*, Chairman

Nominations (Four appointive members; most recent ex-President, Chairman)

1. Merle Ansberry
2. Wendell Johnson
3. John W. Keys
4. Elvena Miller
5. *M. D. Steer*, Chairman

Budget (President; Editor; Secretary-Treasurer, Chairman)

1. *Grant Fairbanks*
2. *Harold Westlake*
3. *George A. Kopp*, Chairman

Liaison (President; Vice-President; Secretary-Treasurer; Editor; Chairman of Committee on Clinical Certification; Chairman of Committee on Ethical Practice; Executive Vice-President, Chairman)

1. *Stanley H. Ainsworth*
2. *Spencer F. Brown*
3. *Grant Fairbanks*
4. *George A Kopp*
5. *Eugene T. McDonald*
6. *Harold Westlake*
7. *Ernest H. Henrikson*, Chairman

Convention Program (Vice-President-Elect; appointive members; Vice-President, Chairman)

1. John H. Gaeth
2. Elise Hahn
3. Lester L. Hale
4. *Margaret E. Hall*
5. George Herman
6. Jack Matthews
7. Gordon E. Peterson
8. Wilbert L. Pronovost
9. Frank B. Robinson
10. R. Edwin Shutts
11. Duane C. Spriestersbach
12. Dean E. Williams
13. Mary E. Williams
14. *Stanley H. Ainsworth*, Chairman

Membership (One member each from speech disorders, hearing disorders, and basic speech and hearing sciences; Secretary-Treasurer, Chairman)

1. William G. Hardy
2. G. Paul Moore
3. Hildred Schuell
4. *George A. Kopp*, Chairman

Honors (Five members who are Fellows; President-Elect, Chairman)

1. Raymond Carhart
2. Grant Fairbanks
3. Margaret E. Hall
4. E. Robert Harrington
5. Martin F. Palmer
6. *S. Richard Silverman*, Chairman

Clinical Standards in Speech (Four members who hold Advanced Clinical Certificate in Speech; appointive Chairman)

1. Ollie Backus
2. Margaret E. Hall
3. Eugene T. McDonald
4. Jack Matthews
5. Duane C. Spriestersbach, Chairman (1952-54)

Clinical Standards in Hearing (Four members who hold Advanced Clinical Certificate in hearing; appointive Chairman)

1. Merle Ansberry
2. Moe Bergman
3. Hayes A. Newby

4. Miriam D. Pauls
5. Leo D. Doerfler, Chairman (1951-53)

Clinical Certification (At least eight appointive members, all holding Advanced Clinical Certificate, four in speech, four in hearing; elected Chairman)

1. Jacqueline Keaster
2. Harriet Green Kopp
3. Ruth Beckey Irwin
4. Frank Lassman
5. Darrel J. Mase
6. Robert Milisen
7. S. Richard Silverman
8. Charlotte G. Wells
9. Eugene T. McDonald, Chairman (1952-55)

Ethical Practice (Four members, one each from speech, hearing, and basic speech and hearing science; elected Chairman)

1. Hilda F. Amidon (1952)
2. James F. Curtis (1952-54)
3. Frank Lassman (1952-54)
4. Darrel J. Mase (1952)
5. Spencer F. Brown, Chairman (1952-55)

Terminology (Five members; appointive Chairman)

1. Norton Canfield (1951-55)
2. Grant Fairbanks (1950-53)
3. William G. Peacher (1950-52)
4. John C. Snidecor (1952-56)
5. Samuel D. Robbins, Chairman (1950-54)

Time and Place (Three appointive members; Executive Vice-President, Chairman)

1. Martin F. Palmer
2. M. D. Steer
3. Kathleen Varner
4. *Ernest H. Henrikson*, Chairman

Special Committees

National Registries

1. Merle Ansberry
2. Ernest H. Henrikson
3. Wendell Johnson, Chairman

Placement, Advisory to Placement Service of the National Society for Crippled Children and Adults

1. Harlan Bloomer
2. George A. Kopp
3. Margaret E. Hall
4. Herbert Koepp Baker, Chairman

Speech Correction Fund

1. Herbert Koepp Baker
2. George A. Kopp
3. M. D. Steer
4. Charles Van Riper
5. Wendell Johnson, Chairman

Exchange of Materials

1. Louis M. DiCarlo
2. T. D. Hanley
3. James M. Mullendore
4. Gretchen Mueller Phair
5. Albert O. Weissberg, Chairman

Placement Study Committee

1. George A. Kopp
2. Harold Westlake
3. Ollie Backus, Chairman

Minimum Requirements for Hearing Clinics

1. Jack L. Bangs
2. George A. Falconer
3. Wallace A. Goates
4. John W. Keys
5. Donald M. Markle
6. S. Richard Silverman
7. Jesse J. Villarreal
8. Raymond T. Carhart, Chairman

Extract from the Report of the Committee on Honors

Definition of Fellowship

Fellowship is an honor which may be awarded to a Member in recognition of achievement in the directions indicated by the statement of the purposes of the Association as recorded in the By-Laws. It has no fixed requirements, and it may not be applied for or proposed by a Member for himself. It is not a class of membership, is not awarded to any arbitrary percentage of the membership, and is not applicable to non-Members or Associates.

A Fellow shall have been active in the Association, as evidenced by publication in the *Journal*, appearance on the convention programs, or service on committees, and shall have a record of achievement, unquestionable and sustained, of one or more of the following types: (1) Original contributions to the advancement of knowledge; (2) distinguished educational, professional, or administrative activity; (3) outstanding service to the Association.

EXTRACT FROM THE REPORT OF THE TREASURER

Balance Sheet
June 30, 1951

Assets

Cash		$ 275.30
Cash in Nat'l. Bank of Detroit		15,470.08
Petty Cash Funds		
Editor	$ 150.00	
President	100.00	
Wayne University	25.00	
Credentials Committee	25.00	
Committee on Ethical Practice	25.00	
Committee on Clinical Standards in Speech	75.00	400.00
Equipment	$ 512.67	
Less: Reserve for Depreciation	125.10	387.57
Accounts Receivable		600.18
Deferred Expense		42.46
Total Assets		$17,175.59

Liabilities

Advances		
From Members	$ 1.00	
From Subscribers	144.63	
Total Liabilities		$ 145.63

Net Worth

Journal of Speech and Hearing Disorders Fund	$6,157.47	
Publications Fund	4,897.55	
General Fund	5,974.94	
Total Net Worth		17,029.96
Total Liabilities and Net Worth		$17,175.59

Balance Sheet
November 30, 1951

Assets

Cash		$ 165.00
Cash in Nat'l. Bank of Detroit		16,641.21
Petty Cash Funds		
Editor	$ 92.82	
Wayne University	25.00	
Committee on Ethical Practice	14.00	
Committee on Clinical Standards in Speech	51.77	
Committee on Credentials	30.70	214.29
Accounts Receivable		759.95
Equipment	$ 512.67	
Less: Reserve for Depreciation	146.45	366.22
Total Assets		$18,146.67

Liabilities

Advances		
From Members	$ 29.50	
From Subscribers	71.75	
Total Liabilities		$ 101.25

Net Worth

Journal of Speech and Hearing Disorders Fund	$6,151.71	
Publications Fund	5,726.92	
General Fund	6,166.79	
Total Net Worth		18,045.42
Total Liabilities and Net Worth		$18,146.67

EXTRACT FROM THE REPORT OF THE EDITOR

Number of pages devoted to different types of materials during 1951 compared with 1950 totals:

	March	*June*	*Sept.*	*Dec.*	*Direct. Suppl.*	*1951 Total*	*1950 Total**
Research and Theoretical Material							
Articles	39	40	58	54		191	217
Abstracts	3	16	3	7		29	20
Total	42	56	61	61		220	237
Practical and Business Material							
Articles	23	22	22	3		70	54
Book Reviews	3	16	4	6		29	19
News	9	10	5	6		30	30
ASHA Business	17	6	2	18	62	105	83
Total	52	54	33	33	62	234	186
Front Matter	2	2	2	2	2	10	10
Total	96	112	96	96	64	464	433

* Exclusive of Monograph Supplement

Manuscripts read and rejected—15

BY-LAWS OF THE AMERICAN SPEECH AND HEARING ASSOCIATION

Adopted December 29, 1951

Article I. Name

The name of this corporation shall be the American Speech and Hearing Association.

Article II. Purpose

The purposes of this organization shall be to encourage basic scientific study of the processes of individual human speech and hearing, promote investigation of speech and hearing disorders, and foster improvement of therapeutic procedures with such disorders; to stimulate exchange of information among persons thus engaged, and to disseminate such information.

Article III. Membership

Section 1. Classes of Membership

The membership of this Association shall consist of two classes: Members and Associates. The Members shall comprise the voting body of the Association. The right to hold office shall be limited to Members.

Section 2. Eligibility

a. The requirement for Members shall be the bachelor's degree or higher in the general area of speech and hearing or tangent areas, except that this requirement may be waived in special instances by recommendation of the Committee on Membership and two-thirds vote by the Executive Council.

b. There shall be no requirements for Associates.

Section 3. Termination of Membership and Privileges

a. Any Member or Associate who violates the By-Laws or the Code of Ethics of the Association shall be suspended by a three-fourths vote of the Executive Council. Persons who have been suspended may, upon recommendation of the Committee on Ethical Practice, be reinstated after one year by two-thirds vote of the Executive Council.

b. A Member or Associate whose dues are not paid by January 15 shall not receive the official publications of the Association until his dues have been paid for the current year.

c. A Member or Associate whose dues are in arrears on January 15 of the second year shall be automatically dropped from the rolls of the Association.

Article IV. Dues

The annual dues of the Association for Members and Associates shall be recommended by the Executive Council and approved by the Membership. Dues are payable in advance for the membership year, beginning January 1. All Members and Associates shall receive all official publications of the Association, including the *Journal of Speech and Hearing Disorders*, Monograph Supplements thereto, and the Annual Directory.

Article V. Officers

Section 1. Designation

The officers of this Association shall be:
President
Executive Vice-President
Vice-President
Secretary-Treasurer
Editor

Section 2. Duties

a. The President shall be the chief executive officer of the Association. It shall be his duty to preside at all regular meetings of the Association, to call emergency meetings of the Association, Executive Council, or any of its committees, to appoint at the direction of the Executive Council all members of committees except those specified to be elected, and to promote the interests of the Association in all ways.

b. The Executive Vice-President shall be responsible for maintaining key policies of the Association and for administering continuing long-term matters involving Association policy. He shall serve as the chief liaison officer of the Association, and be ex-officio Chairman of the Committee on Liaison.

c. The Vice-President shall be ex-officio Chairman of the Committee on Convention Program.

d. The Secretary-Treasurer shall record and file the regular minutes of all official meetings of the Association. He shall receive

and file copies of the minutes of important committee meetings and copies of reports of officers and committee chairmen. He shall handle all correspondence necessary to the proper performance of his official duties. He shall also serve as ex-officio Chairman of the Committee on Membership, and in this capacity receive applications for membership, keep a record of action taken, and maintain a current membership list.

The Secretary-Treasurer shall be entrusted with the collection and safeguarding of the Association's lawful funds, subject to the expressed wishes of the Members of the Association in their official meetings. He shall be bonded, shall be the only official of the Association authorized to draw money from the Association's funds and make expenditures, and his accounts shall be subject to annual audit. All routine expenditures as outlined in the budget prepared by the Committee on Budget shall be made by him; unusual expenditures will be referred to that Committee for action. He shall be business manager of all Association publications and manage the business matters attendant to the annual convention.

e. The Editor shall be Chairman of the Editorial Staff. He shall be responsible for all regular publications of the Association, and all other publications of the Association shall be subject to his general supervision.

f. Each officer shall present to the Executive Council, at the time of its annual meeting, a written report of his official activities.

Section 3. Officers-Elect

All officers shall be elected one year prior to the assumption of their duties. Officers-elect shall be members of the Executive Council. In the event of the incapacity or resignation of any current officer, the officer-elect shall immediately succeed to the office to complete the unexpired term as well as the term for which he has been elected.

Section 4. Removal from Office

Any officer may be removed from office by three-fourths vote of the Executive Council and three-fourths vote of the Members voting, providing the action was initiated by the signed petition of at least ten Members.

Article VI. Executive Council

Section 1. Designation

The Executive Council of the Association shall consist of the Officers, the Officers-Elect, the most recent ex-president, the Chairmen of the Committee on Clinical Certification and the Committee on Ethical Practice, and six Councilors-at-Large, at least one of whom shall be from the area of speech disorders, one from the area of hearing disorders, and one from the area of basic speech and hearing sciences.

Section 2. Meetings

Regular meetings of the Executive Council shall be held each year at the time and place of the annual convention; special meetings may be held at any other times when necessary as called by the President. When it is impossible to gather a majority of the Councilors for a special meeting, business may be conducted by mail ballot. A quorum shall consist of the Councilors present or answering the mail ballot as the case may be.

Section 3. Powers and Duties

The Executive Council shall exercise general management of the affairs of the Association, and shall be the financial and business instrument of the Association. It is the body to which all Officers and Committees of the Association report and are immediately responsible. In general, its duties shall be executive, and it is empowered to perform all such duties as are set forth elsewhere in the By-Laws. Its actions in such matters shall be reported to the Membership at the annual business meeting for information. Where specified elsewhere in the By-Laws, certain matters of business shall be referred to the Membership for action either at the annual business meeting or by mail ballot.

Article VII. Elections

Section 1. Terms of Office

The terms of office shall be as follows:

President	One Year
Executive Vice-President	Four Years
Vice-President	One Year
Secretary-Treasurer	Four Years
Editor	Four Years
Chairman, Committee on Clinical Certification	Four Years
Chairman, Committee on Ethical Practice	Four Years
Councilors-at-Large	Three Years

All terms of office shall begin on January 1 except that the term of the Secretary-Treasurer shall begin on July 1.

Section 2. Elections

Two Councilors-at-Large and the necessary Officers-Elect shall be elected at each annual business meeting. Nominees shall be presented at the meeting by the Executive Council upon recommendation of the Committee on Nomination; further nominations may be made from the floor. The requirement for election shall be a majority

of the votes of Members present at the annual business meeting.

Section 3. Vacancies

In the case of long-term officers, if the vacancy occurs before the election of an officer-elect, the office shall be filled by election at the next annual business meeting, and, if necessary, the Executive Council shall be empowered to appoint an officer pro tem to discharge the responsibilities of the office until the time of such business meeting. If a vacancy occurs for any reason among members of the Executive Council, other than officers, it may be filled for the unexpired term by action of the Executive Council.

Article VIII. Committees

Section 1. General Duties

The regular, continuing business of the Association shall be carried on by a group of standing committees as listed in the following sections. The Chairman of each committee shall prepare for the Executive Council a written report of the year's activities. This report shall be in the hands of the President at least 30 days prior to the annual business meeting. The President, subject to ratification by the Executive Council, may appoint temporary committees to carry out specific duties not provided for in the Standing Committees. All committees are directly responsible to the Executive Council.

Section 2. Committee on Committees

The Committee on Committees shall consist of the Officers of the Association and the President-Elect, who shall be Chairman. Its duties shall be to recommend to the Executive Council the appointive personnel of all committees for the succeeding year.

Section 3. Committee on Nominations

The Committee on Nominations shall consist of four appointive members and the most recent ex-president, who shall be Chairman. The Committee shall prepare nominations for all Officers and Council members to be elected at the annual meeting and submit these nominations to the Executive Council for approval or revision and recommendation to the Membership.

Section 4. Committee on Budget

The Committee on Budget shall consist of the President, the Editor, and the Secretary-Treasurer, who shall serve as Chairman. The Committee shall be responsible for the preparation of the Association budget, and shall act upon all exceptional expenditures not otherwise authorized.

Section 5. Committee on Liaison

The Committee on Liaison shall consist of the President, Vice-President, Secretary-Treasurer, Editor, Chairman of the Committee on Clinical Certification, Chairman of the Committee on Ethical Practice, and Executive Vice-President, who shall be Chairman. The Committee shall study the relationships of the Association to other Associations, to various federal and state offices and bureaus, to allied professions and areas, and shall search for methods of fostering such relationships.

Section 6. Committee on Convention Program

The Committee on Convention Program shall consist of the Vice-President-Elect, the Vice-President, who shall be Chairman, and additional members as shall be required to discharge the duties of the committee. The Committee shall have complete charge of preparing the professional program for the annual convention, relying on the Secretary-Treasurer for completion of all business arrangements necessary thereto.

Section 7. Committee on Membership

The Committee on Membership shall consist of three Members, one each from the fields of speech disorders, hearing disorders, and basic speech and hearing sciences, and the Secretary-Treasurer, who shall be Chairman. The Committee shall process applications of Members and Associates, and exercise general supervision over matters relating to membership. The Committee shall be empowered to qualify applicants at any time, subject to requirements stated elsewhere in these By-Laws and to reversal, when necessary, by two-thirds vote of the Executive Council.

Section 8. Committee on Honors

The Committee on Honors shall consist of five members who are Fellows, and the President-Elect, who shall be Chairman. This Committee shall receive nominations for Fellowship submitted by any Fellow and shall transmit such nominations to a vote of the Executive Council; it shall make recommendations to the Executive Council for Honors of the Association; and it shall submit to the Executive Council the customary annual resolutions regarding individuals and agencies to whom the Association owes its thanks.

Section 9. Committee on Clinical Standards in Speech

The Committee on Clinical Standards in Speech shall consist of a Chairman, who is appointed for a three-year term, and four

other members all of whom hold the Advanced Clinical Certificate in speech. The Committee shall study and define the requirements for certification of clinical competency in speech and refer its recommendations regarding requirements for certification to those persons who have been certified in speech, and in this the Committee shall be regarded as representative of those persons. The resulting recommendations shall be transmitted to the Executive Council for approval. The Committee shall continuously study the existing standards and recommend methods for raising standards.

Section 10. Committee on Clinical Standards in Hearing

The Committee on Clinical Standards in Hearing shall consist of a Chairman, who is appointed for a three-year term, and four other members all of whom hold the Advanced Clinical Certificate in hearing. The Committee shall study and define the requirements for certification of clinical competency in hearing and refer its recommendations regarding requirements for certification to those persons who have been certified in hearing, and in this the Committee shall be regarded as representative of those persons. The resulting recommendations shall be transmitted to the Executive Council for approval. The Committee shall continuously study the existing standards and recommend methods for raising standards.

Section 11. Committee on Clinical Certification

The Committee on Clinical Certification shall consist of a Chairman elected for a term of four years and at least eight other appointive members, four in speech and four in hearing, all of whom hold the Advanced Clinical Certificate. The Committee shall process applications for certification, employing the qualification standards established by the Executive Council on recommendation of the Committees on Clinical Standards in Speech and Clinical Standards in Hearing. Each application shall be acted upon by at least four members holding Advanced Certification in the area (speech or hearing) in which the applicant is seeking certification, plus one other Committee member. Based upon its study of the qualifications presented by the applicants, the Committee shall submit recommendations concerning changes in standards to the Committees on Clinical Standards in Speech and Clinical Standards in Hearing.

Section 12. Committee on Ethical Practice

The Committee on Ethical Practice shall consist of four members, including one each from the fields of speech, hearing, and basic speech and hearing sciences, who shall be appointed every other year, and an elected Chairman. The Committee shall be responsible for the formulation of the Code of Ethics, shall investigate violations of this Code, and shall recommend any action to be taken by the Executive Council as a result of such violations.

Section 13. Committee on Terminology

The Committee on Terminology shall consist of five members, each of whom shall be appointed for a term of four years, with one member newly appointed each year. The Committee shall offer advice in any matter involving terminology on which its counsel is sought by the Association or members thereof, and on any projects undertaken by the Association in which terminology is of concern.

Section 14. Committee on Time and Place

The Committee on Time and Place shall consist of three appointive members and the Executive Vice-President, who shall be Chairman. The Committee shall study and make recommendations to the Executive Council concerning arrangements for dates and locations for future conventions.

Article IX. Clinical Certification

Section 1. Designation

The Association defines two levels of clinical competence, Basic and Advanced, in each of the separate areas, speech and hearing. Any Member who so desires may apply for certification at either level in one or both areas; if in both, the levels of certification need not necessarily be the same. Upon review of his qualifications in light of the standards set by the Executive Council upon recommendation by the Committees on Clinical Standards in Speech and Clinical Standards in Hearing, the Committee on Clinical Certification will issue, with approval by the Executive Council, the certificate or certificates for which the member qualifies. These certificates will be renewed annually as long as the individual remains a Member in good standing of the Association. Certification by the Association shall be considered as evidence of clinical competency.

Section 2. Code of Ethics

A Code of Ethics, formulated by the Committee on Ethical Practice and approved by the Executive Council, shall contain the principles of professional and scientific responsibilities by which Members shall be bound. Any violations brought to it for

action by the Committee on Ethical Practice shall be acted upon by the Executive Council.

Charges of violations shall be presented in writing to the Committee on Ethical Practice. After proper investigation, if the Committee finds the charges warranted, it may issue warning to the Member in question. If such warning is disregarded, or if the nature of the violation is such as to render warning inappropriate, the Committee may recommend disciplinary action by the Executive Council. The accused Member may present a statement in his behalf to the Council, but, if no statement is offered, the Council may act without it.

Article X. Association Honors

Section 1. Honors of the Association

The Honors of the Association may be presented to an individual by the Executive Council upon recommendation by the Committee on Honors. This award recognizes distinguished contribution to the field of speech and hearing and is the highest honor the Association can give.

Section 2. Fellowship

Fellowship, an award recognizing professional or scientific achievement, may be given to a Member upon transmittal by the Committee on Honors and approval by three-fourths vote of the Executive Council.

Section 3. Honorary Life Members

Any Member, upon attaining the age of 65, may apply for and automatically receive Honorary Life Membership with all privileges of a Member. Annual dues will be waived.

Article XI. Conventions

Conventions of the Association shall be held annually at a time and at a place determined by the Executive Council. Conventions will be held only in establishments in which meetings can be held without discrimination on the basis of race, religion, or color. The programs of each convention shall include at least one business meeting of the Association. Only persons who are Members in good standing may attend business meetings. The responsibility for arranging the conventions shall be shared by the Committee on Program and the Secretary-Treasurer, according to their duties as outlined in these By-Laws.

In periods of emergency, the Executive Council may, by three-fourths vote, cancel the annual convention. In this case, the Executive Council shall be empowered to transact all business that would ordinarily be brought before that meeting.

Article XII. Publications

Section 1. Official Publications

The Association shall publish a periodical entitled *The Journal of Speech and Hearing Disorders,* shall issue such Monograph Supplements to the *Journal* as recommended by the Editor and the Committee on Budget, and shall also publish annually a Directory of the membership rolls.

Section 2. Editorial Staff

There shall be an Editorial Staff consisting of at least four Associate Editors named by the Editor, subject to ratification by the Executive Council, and as many Assistant Editors as the Editor deems necessary, to be appointed by him.

Section 3. Business Manager

The Secretary-Treasurer shall be the Business Manager of the *Journal.* He shall submit a detailed and audited financial report of Association publications to the Executive Council at the end of each fiscal year.

Section 4. Appropriations

Not less than 50 per cent of the amount of annual dues received by the Association shall be allocated for publications. Funds thus accumulated which are not expended during the fiscal year shall be retained for use on future publications.

Article XIII. Amendment

Amendments to these By-Laws may be initiated by the Executive Council or in a written proposal signed by any 10 members. Proposed amendments should be passed by majority vote of the Executive Council 30 days in advance of the vote thereon by the Membership. Vote on an amendment may be either at the annual business meeting, or by mail ballot of the entire Membership. Decision to employ the latter voting procedure may be reached by two-thirds vote of the Members present at an annual business meeting, or by two-thirds vote of the Executive Council.